

THE PATTERN OF DAILY EXERCISE FOR THAI COMMUNITY DM. AT PREMRUTHAI PRAVATE COMMUNITY BANGKOK

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ABSTRACT

Aims: To change the ability of self-efficacy, self regulation and self-care health behavior about exercise health behavior for prevention and control of diabetes complication. with Pattern Of Daily Exercise.

Methods: The sample of subjects at risk and patients with diabetes and high blood pressure. A total of 28 people from the Premruthi community 20 at Pravate Bangkok. Most are female have lower education. Entitled to healthcare Gold in Bangkok. The Vulnerable groups and groups with diabetes and high blood pressure 51.3 percent. Accounted for 10.6 per cent of the risk factors is important. Obese / BMI was 24.7 percent higher risk behavior is eating spicy food (sweet, sour, salty) 40.7 percent. Lack of exercise, stress, 12.7 percent to 28 percent, Genetic risk is 23.3 percent and 12.7 percent were smokers. By the method of participatory learning with Pattern Of Daily Exercise. Research design 4 times meeting each time consisted of 4 steps (planning, action, observe and reflect). The main activities in health education Pattern Of Daily Exercise program behavior were motivate compliance by ice breaker to know each other, education and practice, care and share about experience and information, empowerment, story telling, two-way communication, reflective thinking, team-based learning, flipped class, active learning about self care in the prevention and control of diabetes complication among participants in group.

Results: Most members were satisfied with the high level of 97.3 per cent suggested in the project next time. After receiving behavior modification ago have efficacy in their health behavior (self-efficacy), self-regulation and self-care in exercise behaviors better than before the event: 92.3 percent, 90.0 and 96.6 of the participants, respectively. It is a change in a better direction.

Conclusion: This research focused on the development of activities that encourage participants have the skills and knowledge through practical action. Make sustainable approach is organized in accordance with activities that blend into community everyday life. Obtaining social support to encourage volunteerism, , some extra incentive to participate. These factors resulting trust and cooperation from members and communities of practice to foster healthy.

Keywords--Exercise participatory action research, Health education

INTRODUCTION

Diabetes is one of the largest global health emergencies of the 21st century. Each year more and more people live with this condition, which can result in life-changing complications. In addition to the 415 million adults who are estimated to currently have diabetes, there are 318 million adults with impaired glucose tolerance, which puts them at high risk of developing the disease in the future death¹. Of complications to the eyes, kidneys, nervous system, heart and stroke.

In Thailand are facing diabetes Data from the Bureau of Policy and Strategy Ministry of Public Health Meet people died from diabetes in the year 2009, about 7,019 people, or about 19 people per day, and a survey of the health status of people aged 15 years and over Thailand 2nd Year 1996-1997 compared to the three years from 2546 to 2547, prevalence increased from 4.4 percent to 6.9 percent for the fourth time as last time. Year 2551-2552 Found the same prevalence of diabetes is 6.9 percent. And a survey of the health status of Thailand found that one in three times, four of those with diabetes do not know they have diabetes before. For those who have been diagnosed by a physician as diabetes, 3.3 percent were not treated. And those who were treated with only 28.5 percent of the control of blood sugar levels in the less than 126 milligrams per deciliter had². So for those who are at risk from diabetes and asymptomatic. Reducing risk factors and treatment of early stage as well as encouraging people with diabetes to take care of themselves properly, so it is a measure that will reduce and slow down the disease and the effects. Diabetes is caused by several common factors that can be prevented complications by behavior modification, eating diminish the fat diet and exercise can prevent cardiovascular disease in diabetes mellitus e¹³. By helping vulnerable groups and people with diabetes understand and realize the threat of disease. Knowing the causes of disease know the early warning signs of diabetes. Knowing how to prevent delay diabetes. Learn self-care on diabetes control and prevent complications that arise as a consequence. The health benefits of regular exercise, establishing and maintaining regular physical activity, the cultural and environmental barriers to physical activity in community is particularly important to promote physical activity in people with diabetes.

Health benefits of physical activity in type 2 diabetes: Improved insulin sensitivity and therefore better blood glucose control, increased glucose utilization, decreased glucose production from the liver, decrease in circulating insulin levels during exercise¹⁶. Several recently reported trials show that type 2 diabetes can be prevented and delayed, at least in the short term¹¹. The Da Qing study in China followed people for 6 years. Subjects were randomized to three groups: Diet intervention, exercise intervention, combined diet and exercise. After 6 years, the 'diet' group showed a risk reduction of 31%. The 'exercise' group showed a greater risk reduction (46%). There was no additive effect of diet and exercise, with the 'diet and exercise' group showing a similar risk reduction (41%) to that of the 'exercise' group alone. In the Finnish study, 522 subjects with impaired glucose tolerance (IGT) were randomized to a control group or a group who had a diet and exercise intervention. They were followed for 3.2 years. There was a 58% reduction in the incidence of type 2 diabetes in the 'diet and exercise' group³. Finnish Diabetes Prevention Study (Finland) 2001 522 persons, 40-64 years BMI >25 Random selection by persons 3.2 years follow-up Diet + exercise 58% decreased incidence in the 'diet + exercise' group⁴. Diabetes Prevention Programme (USA) 2002 3234 persons =>25 years, BMI =>22 (Asian people), =>24 (other groups), random selection 2.8 years follow-up 3234 persons =>25 years, BMI =>22 (Asian people), =>24 (other groups), random selection 2.8 years follow-up 31% decreased incidence of diabetes in the metformin group 58% decreased incidence in the 'diet + exercise' group. The Diabetes Prevention Program also studied people with impaired glucose tolerance (IGT). In this study, people were randomized to one of three groups: Placebo Metformin Diet and exercise.^{5,6} Most guidelines recommend exercise (including aerobic and/or resistance training) several times a week. Recommendations about the amount and kind of exercise differ throughout the world. The recommendations in this slide are from the Canadian Diabetes Association Clinical Practice Guidelines⁶. The IDF Guideline for Type 2 Diabetes recommend 30-45 minutes a day, 3-5 days a week Brisk walking is probably the most common form of aerobic exercise⁷. Resistance training does not necessarily require expensive equipment. Weights used can be as simple as a can of soup or a packet of grain. Progressive resistance training has shown benefits when people progress to three sets of approximately eight resistance type exercises at moderately high intensity (eight repetitions at the maximum weight that can be lifted eight times)¹¹.

Tips to help start physical activity Identify an activity that will be enjoyed slowly, perhaps 5-10 minutes at a time Increase duration and intensity slowly. Consider doing exercise in a group or with a partner.

Prevent boredom by varying the activities. Set realistic goals. Encourage people to reward themselves when goals are met. People who have not been recently physically active and are intending to start exercising should see a physician in order to identify the risks associated with exercise and how to manage these risks. As healthcare providers we need to ensure that people who undertake physical activity are aware of safety precautions. They should be reminded to drink adequate water to avoid becoming dehydrated, especially if exercising in a hot climate. If blood glucose is $>14\text{mmol/L}$ (252mg/dl), strenuous exercise is not recommended as it may cause the blood glucose to increase. If there is not enough insulin in circulation, the liver will respond to exercise by releasing more glucose. In type 1 diabetes, it may also lead to accelerate fat catabolism and ketone formation¹¹

Precautions – type 2 diabetes The risk of hypoglycaemia is reduced in type 2 diabetes. However, some people on insulin secretagogues or insulin therapy may need to adjust their medication prior to prolonged and excessive exercise.

Summary Physical activity should be encouraged in all people with diabetes. People need to be educated about prevention and treatment of hypoglycaemia. People should be taught to plan for periods of physical activity.

We know that living with diabetes is not easy; people with diabetes must assimilate a great deal of information and complete a series of daily tasks in order to effectively self-manage their condition. Lifestyle and behavioural changes regarding exercise, therefore, should be required from people who are DM or at high risk. This needs to be taken into consideration when providing exercise education programmes. The first step is to educate in order to facilitate informed decision making. Although many people with type 2 diabetes do not view their condition as serious, it needs to be acknowledged and understood that complications occur with all types of diabetes. Diabetes is largely managed by the person with the condition on a day-to-day basis. Thus, caring for diabetes is a personal responsibility.

We can think of education as the body of information, skills and technologies that a person with diabetes needs to learn. As discussed in the teaching and learning module, how they learn will have an impact on whether or not behavioural changes follow. In this module we will discuss how to help people take the steps to behavioural change once they have the necessary knowledge.

However, by a skilled multidisciplinary healthcare team in diabetes education, ‘teaching and practicing can be perceived as offering people with diabetes the opportunity to learn.

A person cannot be forced to learn something; effective teaching creates an interest in a subject so that students will want to grasp the opportunity to learn. There are many risk factors for type 2 diabetes. Some are preventable and a great deal of work has been done to try to develop programmes to prevent diabetes. To maintain good health habits as a way of life of each individual, consisted as the follow¹²:

1. Positive reinforcement
2. Result based management
3. Optimism
4. Motivation
5. Individual or client center
6. Self-esteems

The efficacy of a behavioral change, therefore, the implementation of the project was to maintain good health habits as a way of life of each individual promote learning how to prevent diabetes complications.

Thus **The Pattern Of Daily Exercise For Thai County DM . at Premruthai Pravate Community Bangkok** This results in reducing complication, morbidity and mortality rates from diabetes complications, and maintain good health habits as a way of life of each individual promote learning how to prevent diabetes complications in Premruthai Pravate Community Bangkok

OBJECTIVES

The members who attended this program is maintain good health habits exercise as a way of life of each individual promote learning to prevent diabetes complications.

RESEARCH DESIGN AND SAMPLES

The research design by using Participatory Action Research (PRA) with 28 purposive sampling at Premruthai Pravate Community Bangkok, who at risk for diabetes or high blood pressure. They enroll in the participatory activity with **The Pattern Of Daily Exercise** Health during January 2013 – may 2013, for creating 3 S (self awareness, self regulation and self care) as in the step figure 2.

Figure 1

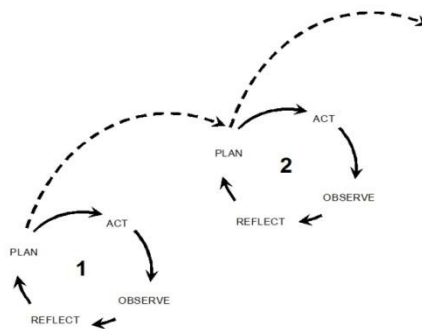


Fig. 1 shows a spin around the operating part for prevention and control of Diabetic complication

METHODOLOGY

The duration of the operation in January 6, 2558 - July 31, 2558. By the method of participatory learning with **The Pattern Of Daily Exercise** program. Research design 4 times meeting each time consisted of 4 steps (planning, action, observe and reflect. The main activities in **The Pattern Of Daily Exercise** program behavior were motivate compliance by ice breaker to know each other, teaching and practicing, care and share about experience and information, empowerment, story telling, two-way communication, reflective thinking, active learning about self care in exercise among participants in group. The plan of activities for promoting health and behavioral modification in each time were in the following

1.1 The first meeting activity

- Icebreaker
- Initial health assessment activities
- Teaching demonstration and practice.
- Participation for creating self awareness and participation in changing their behavior.
- Group discussion, participation in solving problems of the participants.

1.2 The second meeting activity

- Icebreaker
- To Improve understanding of health behavior modification
- Training activities to educate about exercise health behavior modification .
- Group discussion participation in solving problems of the participants, demonstration, practicing and the empowerment of the self to the self-regulatory.

1.3 The third meeting activity

- Icebreaker
- Promoting knowledge to use in exercise group practice activity
- Activity for modification health behavioral
- Evaluation activities individually by test phone and home visits by nurse.
- Group discussion participation in solving problems of the participants, demonstration, practicing and the empowerment of the self to the self-regulatory of exercise .

1.4 The fourth meeting activity

- Icebreaker
- Assessment activity after participating. and posttest.
- Summary of the activities and the benefits of participating.
- Group discussion and observation participation in solving problems of the participants, demonstration, practicing and the empowerment of the self to the self-regulatory. , Awards and souvenirs.
- Evaluate program
- Closed the program

ETHICS

The research takes into account the right of the sample. The objectives of the research process, research. And a period of research The clarification of the right to accept or refuse to participate in this research. Without affecting in any way the lesson. In addition, during the research If the samples do not wish to participate in the research completed on schedule. Can be terminated Without affecting the learning of information obtained from this research are confidential. Presentation of data will be presented in an overview. There is no disclosure of the name and surname When samples are willing participants. The research sample Sign a consent form to participate in the study (informed consent form).

RESULTS

From the risk group with diabetes and high blood pressure 51.3 percent. Accounted for 10.6 per cent of the risk factors is important. Obese / BMI was 24.7 percent higher risk behavior is eating spicy food (sweet, sour, salty) 40.7 percent. Lack of exercise, stress, 12.7 percent to 28 percent, Genetic risk is 23.3 percent and 12.7 percent were smokers. The results showed that after receiving **The Pattern Of Daily Exercise** Program Have efficacy in their exercise health behavior (Self-efficacy), Self-regulation and Self-care better than before the event: 92.3 percent, 90.0 and 96.6 of the participants , respectively. It is a change in a better direction. And blood pressure drop 86 percent to 36 percent weight loss and BMI decrease of 20.7 percent. That health status has changed to the better . Most members were satisfied with the high level of 97.3 per cent

The behavior change after **The Pattern Of Daily Exercise** were changed as following.

1. That the efficacy of behavioral change their health than before, increasing participation of 26 people, representing 92.8 percent of the total.

2. Directing the behavior of people at increased over the first 25 participants, representing 89.2 percent of the total.

3. Has the self-care behaviors. The increase over the first 26 people to attend the event 92.8 percent of the total.

Satisfaction of the Program

The satisfaction of participants in this program at the high level of 89.2 percent.

Data Analysis from Qualitative Data

By analyze qualitative data about **The Pattern Of Daily Exercise** in the prevention and control of diabetes complication on a daily basis that involves behavior modification& health promotion. The study concluded by telling the members about controlling diabetes complication risk by teaching and practicing about exercise. The result concluded that most control blood sugar, daily exercise.

Table 1
Numbers and percentages of the sample (n = 28 patients)

Data	n	%		Data	n	%
Age (yrs)				Sex		
40-49	8	28.6		Female	20	71.4
50-59	8	28.6		Male	8	28.6
>60	12	42.8		After the Program		
Education				Weight change		
High school,Vocational	15	53.6		Diminish	18	50.0
Bachelor.	13	46.4		unchanged	7	25.0
Right of Medical Care				Increase	3	10.7
Gold Card	12	42.8		Blood pressure change		
Social Security	14	50.0		Diminish	18	64.2
Government	2	7.2		unchanged	7	25.0
				Increase	3	10.7
Data	n	%		Data	n	%
The risk for diseases (more than one risk)				Blood Glucose Level		
Diabetes Mellitus	25	89.2		Diminish	24	85.7
Hypertension	15	53.0		unchanged	4	14.2
Cerebovascular	8	28.5		Increase	no	0.0
Obesity	20	71.4		Satisfaction of Program		
Sample with disease				Moderate	3	10.7
Diabetes Mellitus	20	71.4		High	25	89.2
Hypertension	14	50.0				
Cerebovascular	8	12.5				
Obesity	8	28.6				

DISCUSSION

The result from this research shows that the biodata of samples mostly 71.4 % is female and 28,6 is male. This results is according to the study of Intharakamhang, A. et.al (2010) ⁵ -Study of Administration and Evaluation to Health Adaptation of Health Center in Bangkok 21 projects in 2009 found that DM person is female 67.68% and male is 32.32 % compare with World population (2015) DM person is female 199.5 million and male is 215.2 million, contrast with this study and finding of Intharakamhang, A. et.al study⁸. It may be the different from race context in many areas include economic, life style, nutrition, exercise, sleep and rest, working.

The sampling's BMI decreased 50% , BP decreased 85.7% .. This results is according to the study of Intharakamhang, A. et.al (2010)⁸ "Study of administration and evaluation to The health adaptation of Health Center in Bangkok 21 projects in 2009 found that participation group decrease BMI 65.36%, BP 61.45%, BS (DTX) 59.49% , mean that they can modified behavior must good self awareness so they can got self regulation at last they can self management to prevent complication both acute and chronic complication mean that they got self efficacy.

This results is also according to the study of Sumnuk, N. "Study of effective program modification behavior people health risk group to hypertension in community, Pakpanung district, Nakornsrihararaj" and Boonsri Kittichottipanich et.al¹⁷ (2013) The Nutritional Health Behavior Modification for Controlling Hypertension at Ruampattana Community Bangkok found that participation got more knowledge, activities, exercises, means of self management behavior about eating exercise increase after the study significant. The satisfaction of participants in this program at the high level of 89.2 percent. Robert Scales, PhD* and Joseph H. Miller, MSW¹⁰ Motivational Techniques for Improving Compliance with an Exercise Program. Skills for Primary Care Clinicians Found that it is one of several useful approaches that can be used by a primary care clinician to improve patient compliance.

Thus in this program, the most participant increase knowledge&self regulation behavior. That is the one guideline for controlling and prevention diabetes complication.

CONCLUSION AND RECOMMENDATIONS

This research using participatory action research make sustainable approach is organized in accordance with activities that blend into everyday life. Obtaining family friend and social support to encourage remind control and avoid participant for good in exercise health care personals, some extra incentive to participate. These factors resulting trust and cooperation from members and communities of healthy community to promotion and modification health behaviors which focused on the development of activities that encourage participants have the skills and knowledge through practical action.

ACKNOWLEDGMENTS

This study was supported by the grant from Research and Development Institute, and Funding for Personnel Development Center, Suan Sunandha Rajabhat University (SSRU), Thailand. The researcher gratefully acknowledge to SSRU and College of Nursing and Health.

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RELATIONSHIPS BETWEEN NUTRITIONAL STATUS AND CHILD DEVELOPMENTS OF PRESCHOOL AT SAMUT SONGKHRAM KINDERGARTEN SCHOOL IN THAILAND

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ABSTRACT

This research aims to study the nutritional status of preschool children and its relationships with child developments (physical, cognitive, emotional, and social). This study is a descriptive correlation research that is composed of 74 pair samples (4 to 6 years old kindergarten children and their parents). All data were collected by using 4 instruments including demographic characteristic questionnaires, child nutritional status questionnaire, growth chart of weight-for-height norms created by the Bureau of Nutrition, the Department of Health and the Ministry of Public Health, and Denver Development Screening Test (DDST). The data were analyzed by descriptive statistical concepts including frequencies and percentages for demographic characteristics of parents and children, nutritional status, and child development of preschool children. The Rank-Biserial correlation coefficient was used to investigate the relationships between nutritional status and each aspect of child development. Most of the preschool children under study were between 4 and 6 years old and the majority (56.8%) of the sample were boys (n = 42). The results reveal that more than the third (35.1 %) exhibited normal weight, 28.3 % of children were obese, and 14.9 % showed overweight. More than 85 percent demonstrated normal child development. Furthermore, there was no relationship among nutritional status in the class of underweight level 2, underweight level 1, normal weight, overweight, and obese and the 4 aspects of child development including physical, cognitive, emotional, and social developments. However, significant relationships between nutritional status in the class of risk for overweight and emotional development of the preschool children were observed ($r = .253, p = .05$). The recommendation for future research are further studies on the association between nutritional status in child development at other ages so that more data can be collected and the problem solved in time as well as assesses of the nutritional status in other ages in order that early detection of deficiency can be made.

Keywords: Child developments, Nutritional status, Preschool children

INTRODUCTION

Children are one of the country's most important resources. Quality children demonstrate proper growth and development in all areas [1]. The most crucial period of human physical and cognitive development is the preschool period, in which children experience the beginning of life and exhibit the highest rate of growth [2][3]. The screening and survey of child development during the preschool period is very important because it can accurately identify cases of developmental deficiency or delay, so that corrective measures can be applied in time. Today, the Denver Development Screening Test (DDST) or Denver II screening test is still widely used in determining the level of preschool child development. According to the survey conducted by Thailand's Health Promotion Bureau in 2003 and 2007, based on Denver II screening method, the rates of preschool children in Thailand exhibiting normal child development in all areas were 72% and 67.7% respectively. Cases of suspected delay accounted for 28.0% and 32.3% respectively. The area of development in which most cases of suspected delay was found was language development, followed by fine motor development, social development and gross motor development. These areas of development are

fundamental to a child's cognitive ability and crucial to her learning ability. In general, Thai children demonstrate a delay in many areas of development because there is a lack of appropriate developmental intervention and the inappropriate upbringing environment. This is a national problem that requires collective actions [4].

In addition, two other factors greatly impact the level of preschool child development: first, the child's heredity; and, second, the child's environment. The child's environment can be further categorized into the following factors. The first factor is family's social and economic status. Nowadays, most Thai families are nuclear families. Both the parents have to work outside to sustain the family's income and have no time to raise the children. Therefore, preschool children are sent to nurseries or childcare centres [5]. Inappropriate childcare often results in the child's inappropriate behaviours. For example, aggressive behaviour is usually caused by inadequate attention paid to the child by her family. The low level of appropriate intervention from the family can cause a delay or failure in the child's development. The second factor is social values. In Thailand, there has been a shift in value from caring about others to caring only about oneself. The third factor is the media's influence. Currently, the media has immensely shaped a child's perception through the information it presents daily. Preschool children, especially, are very adept and quick at picking up and imitating objects in their surrounding environment. When a child is exposed to something exciting, she often memorizes and picks it up immediately, and later expresses it in her speech and act. The information a child receives from the media should be screened and made sure to support the child's development. The fourth factor is the child's nutritional status. Nutrition provides the basis for good physical health, which will contribute to the child's proper level of growth and development. A lack in nutritional status clearly has a negative impact on the child's development. A child with good nutritional status will be able to catch up with standard levels of development.

On the other hand, a child with malnutrition will grow up weak, having low immune capacity and sensitive to infection. She will likely be diagnosed with underweight, resulting from insufficient nutritional intake or chronic diseases. In most cases, the children with malnutrition exhibit an iron deficiency, a problem frequently found in children from 6 months old to 3 years old. The iron deficiency will cause a delay in the child's cognitive development. Besides underweight, the overweight condition can also impact the level of growth and development of a child. Overweight or obesity in children results from overeating and a lack of exercise. Childhood overweight is a problem in most countries including developing countries. According to the World Health Organization's survey, the increase in childhood overweight in developing countries is 30% higher than that in developed countries. Obese children have higher risks for illnesses such as diabetes, heart and vessel diseases and skeletal diseases [6]. The major cause of childhood obesity is an imbalance between eating and exercising behaviors. That is, it is found in children eating too much carbohydrate and too little vegetables and fruits, coupling with a lack of exercise and regular long-time still motion watching TV, playing games or computer [7][8]. Malnutrition can be found in some obese children and is often unrecognized by parents. A survey on childhood obesity in Thailand reveals that most overweight or obese children have vitamin or mineral deficiency due to insufficient vegetables and fruits intake [9].

The data above have indicated that nutritional status is critical for child development during preschool period. This research aims to study the relationships between nutritional status and preschool child development. Its sample will be preschool children at Samut Songkram Kindergarten School, Muang District, Samut Songkram province. The research results will contribute to the promotion of nutritional status and child development among preschool children.

OBJECTIVE

The objectives of this research are (1) to study the nutritional status of preschool children, (2) to assess the nutritional status of preschool children, (3) to assess the child development of preschool children, and (4) to investigate the relationships between nutritional status and child development of preschool children at Samut Songkhram Kindergarten School in Thailand.

METHODOLOGY

This study is a descriptive correlation research that utilizes quantitative methodology to investigate the relationships between nutritional status and child developments including physical development, cognitive development, emotional development, and social development of preschool children. The targeted population was composed of 280 pairs of kindergarten children and their parents at Samut Songkhram Kindergarten School, located in a suburban area in Thailand. From this population, random sampling was adopted. Based on the sampling formula provided by Taro Yamane [10], with a confidence level of 95% and margin error of 10%, the sample size was 74 pairs.

The instruments for the data collection included 4 instruments as follows:

1. A demographic questionnaire consisting of socioeconomic characteristics of families, including gender, age, education level, marital status, monthly income in Thai baht, number of children in the family and birth order of the sampled child.

2. A child nutritional status questionnaire measuring the dietary behavior of preschool children. This questionnaire assessed the consumption patterns of preschool children using the adapted 2 - dimensional scales with 11 items developed by the researcher based on the literature review. The Cronbach's alpha was calculated to test the internal consistency and the total scale was .762.

3. The growth chart of weight-for-height norms created by the Bureau of Nutrition, the Department of Health and the Ministry of Public Health. This chart was used to evaluate nutritional status of Thai children at the age of 2 to 7 years old. The criteria for assessment of overweight and obese children have 4 levels, each of which provides a definition for the growth status of the children. Level 1, normal weight-for-height, refers to the child whose weight-for-height ranges from minus 1.5 S.D. to plus 1.5 S.D. Level 2, at risk of overweight, refers to the child whose weight-for-height ranges from plus 1.5 S.D. to plus 2 S.D. Level 3, overweight, refers to the child whose weight-for-height ranges from plus 2 S.D to plus 3 S.D. Level 4, obese, refers to the child whose weight-for-height is above line plus 3 S.D. line [11].

4. The Denver II, a developmental screening test for preschool children in comparison with the standard child development. It is a practical observational test which has been used as a standard test in many countries [12]. There are 125 items divided into 4 dimensions: personal-social; fine motor adaptiveness; language; and, gross motor adaptiveness. To interpret the meaning of each item, if a child passes an item that falls completely to the right of her age line, her development will then be considered advanced on that item (Advanced). If a child passes, fails or refuses an item of which the age line falls between the 25th and 75th percentile, the child development will then be considered normal on that item (Normal). If a child fails or refuses an item of which the age line cut through between the 75th and 90th percentile (meaning, more than 75% children can perform the item), the child development will then be considered cautionary on that items (Caution). Finally, if a child fails or refuses an item that falls completely to the left of the age line, the child development will then be considered delayed on this item (Delay). Before the data were collected, this study was reviewed and approved by Suan Sunandha Rajabhat University. The principal of Samut Songkhram Kindergarten School also gave the researcher a permission to conduct the study at the school site and to recruit the parents and children. Eligible parents were invited to participate in the study by mails. If the

parents accepted, the researcher would send the demographic questionnaires and the child nutritional status questionnaires by post. Meanwhile, all preschool children were assessed in terms of height and weight using the Thai growth chart of weight-for height norms. They were also screened for the level of child development using Denver II.

The data were cleaned and checked for error and missing before entering the analysis procedures. The Statistical Package of Social Science software (SPSS) was used to analyze demographic variables and other variables. The Rank-Biserial correlation analysis was run to investigate the relationships between nutritional status and each aspect of child development variables.

RESULTS

The research results are presented in 3 Tables. The first Table shows the weight assessment of the children. The second Table shows the child development screening results of the children. The last Table presented the correlation between nutritional status and child development of the children.

1. Demographic characteristics of parents and preschool children

There were 74 parents participated in this study. The majority of parents were mothers (n = 62). Over half of the parents were over 30 years old (n = 53). The lowest parent's educational level was primary school (n = 20), the highest educational level was bachelor degree (n = 7) and the majority of parents had completed a high school level (n = 31). More than 80 percent of the parents were married (n = 37). The majority had an income in the range of 10,001 to 15,000 baht (n = 34). About half of the parents had two children in their families (n = 40). The children in this study were boys (n = 42) and girls (n = 32), respectively. Over half were the second child in their families (55.4%, n = 41). The ages of the children ranged from 4 to 6 years old. The majority of children were 5 years old (n = 36).

2. Nutritional status of preschool children

Table 1
Nutritional status of preschool children

Nutritional status	n	%
Underweight level 2	6	8.1
Underweight level 1	5	6.8
Normal weight	26	35.1
Risk for overweight	5	6.8
Overweight	11	14.9
Obese	21	28.3

Table 1 displayed the nutritional status of the preschool children. The majority of them were normal in weight (n = 26). More than 28 percent of the children were obese (n = 21) and about 15 percent were overweight (n = 11). The minorities were underweight and were at risk of overweight (6.8%).

3. Child development screening of preschool children

Table 2
Child development screening of preschool children

Child development	n	%
Physical development		
Delay	6	8.1
Normal	68	91.9
Cognitive development		
Delay	10	13.5
Normal	64	86.5
Emotional development		
Delay	8	10.8
Normal	66	89.2
Social development		
Delay	4	5.4
Normal	70	94.6

Table 2 showed the child development screening results of the preschool children. For physical development, there were 6 children with delayed development while the majority of 68 were found normal. In terms of cognitive development, there were 10 children with delayed development while the majority of 64 were found normal. For emotional development, there were 8 children with delayed development and 66 children with normal development. Lastly, for social development, it was found that 4 children exhibited delayed development and 70 children were normal.

4. Correlations between nutritional status and child development of preschool children

Table 3
Correlation matrix between nutritional status and child development of preschool children

Child development	(1)	(2)	(3)	(4)	(5)
(1) Nutritional status	1.000	.098	.013	-.023	.051
(2) Physical development		1.000	.697**	.526**	.601**
(3) Cognitive development			1.000	.510**	.545**
(4) Emotional development				1.000	.824**
(5) Social development					1.000

** Correlation is significant at the .01 level

As reported in Table 3, there was no relationship between nutritional status and the four aspects of child development including physical, cognitive, emotional, and social development. However, the result indicates that there were positive relationships among the four aspects of child development at the .01 level. Physical development were correlated with cognitive development ($r = .697, p = .01$), emotional development ($r = .526, p = .01$), and social development ($r = .601, p = .01$). Cognitive development was correlated with emotional development ($r = .510, p = .01$) and social development ($r = .545, p = .01$). Moreover, emotional development was correlated with social development ($r = .824, p = .01$).

CONCLUSIONS AND FUTURE WORK

Based on the research results above, there are 3 interesting issues for discussions. First, the majority of preschool children at a suburban area in Samut Songkram province exhibit normal nutritional status. However, a number of sample students were found obese (28.3%) and overweight (14.9 %). There were many reasons to support this argument. Nowadays, the fierce marketing strategies by snack companies and fast

food chains have vastly shaped a child's perception through inappropriate information. Some preschool children asked parents for fast food because they want the premium products that are offered, not because they want to eat what's on the menu. Gradually, they develop a habit of consuming low-quality food. Maytapattana found parents reporting that most of the children prefer to consume fried food, sugary soft drinks and eat snacks. Furthermore, these children do not have adequate exercise because they spend time watching TV and playing video games. Some parents reported that their children had inappropriate eating habits; for example, having a meal too much and too quickly, and having late dinner, i.e., after six pm [13]. These unsuitable behaviors are the causes of overweight and obesity. This result corresponds with the findings of Rerksuppaphol's and Rerksuppaphol's who studied obesity among Thai children in suburban Bangkok. In their study, 12.8% of the sample students were overweight and 9.4% were obese [14]. These results indicate that preschool children both living in suburban area and urban area of Thailand may have the tendency to be overweight and obese.

Second, the child development screening using Denver II method shows that more than 80 percent of children have appropriate child development in all four domains (physical, cognitive, emotional, and social). However, 13.5 percent of the sample students show a delay in cognitive development, 10.8 percent a delay in emotional development, 8.1 percent a delay in physical development, and 5.4 percent a delay in social development. This result could be explained by the lack of appropriate developmental intervention and the inappropriate upbringing environment. According to the Thailand 2012 Multiple Indicator Cluster Survey (MICS) conducted by the National Statistical Office (NSO), 91.5 percent of Thai children aged 3 to 6 are developmentally on track. An analysis of the four domains of child development shows that 97.4 percent of children are on track in the physical domain, but fewer are on track in the domains of learning (96.5%), social-emotional (86.5%) and literacy-numeracy (63.3%). In each individual domain, the higher score is associated with children attending an early childhood educational program, and with the child's older age [15].

Third, there is no relationship between preschool children's nutritional status and the four domains of child development (physical, cognitive, emotional, and social). However, there are positive correlations among the four domains of child development at the .01 level. These finding showed that both normal and abnormal nutritional status among preschool children at Samut Songkram Kindergarten School do not correlate with the level of the child's development. According to Warsito and colleague studied the relationship between nutritional status, psychosocial stimulation, and cognitive development in preschool children in Indonesia and found that there is no significant relationship between nutritional status (WHZ) and cognitive development [16].

Based on this study, there are many recommendations for future work.

1. Study of the relationship between nutritional status and child developments of preschool children in a more variety of contexts so that the results of this study could be confirmed.
2. Investigation on the association between nutritional status in child development at other ages such as toddler and school ages so that more data can be collected and the problem solved in time.
3. Assessment of the nutritional status in other ages including infant or toddler so that early detection of deficiency can be made.

ACKNOWLEDGMENTS

The author thanks the Suan Sunandha Rajabhat University, who supported the scholarship to present an oral presentation.

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FAMILY PROBLEMS OF SEX-RISK FEMALE ADOLESCENT STUDENTS IN A HIGH SCHOOL AT SAMUT SONGKRAM PROVINCE, THAILAND

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ABSTRACT

The objective of this survey research was to study family problems of the sex-risk female adolescents of early secondary school students. The samples were sex-risk female adolescents of early-secondary school students at a high school in Samut Songkram Province, Thailand. The samples were 89 female students who were purposively selected by social dimension screening and confirmed by their classroom teachers. The research tools were questionnaires to evaluate family problems of sex-risk female adolescents. The questionnaires consisted of 19 items of 3 true value scales questions: very true, partly true and not true. Content validity of the questionnaires was tested and the CVI (content validity index) was 0.89. Data were collected from self-administered questionnaires by the samples.

The research results showed that family problems with true value scales of very true and partly true were 24.7% and 14.7% respectively. The family problems which were admitted to very true and partly true were 1) father had new spouse 2) mother had new spouse 3) father and mother often quarreled 4) father scolded frequently and not polite to children 5) father was alcoholic 6) father had a lot of debts 7) mother worked outside with little time to talk to her children and 8) father worked outside with little time to talk to his children. Proactive suggestion the state of affairs of today's teenage parents reflects the impact of insecurity. Of the future Thai family institution especially the production and development of the new generation of society as a people to meet quality of life. Recommendation from this study that should be analytical study comparing families of sex-risk female adolescents group and normal group to evaluate whether the present situation of early sexual intercourse and teenage pregnancy is related to family problems.

Keywords–family problems, sex-risk, adolescents

INTRODUCTION

At present the trend of teenage pregnancy in Thailand is increasing. The data from 2005 to 2010 showed the teenage pregnancy rates were 55.0, 54.7, 55.7, 56.3, 56.4 and 56.1 per 1000 population respectively [1]. The rates were much higher than WHO benchmark of 10 per 1000 population [2]. There was the trend of sexual intercourse at younger age. In 2011, Office of Women Affair and Family Institute studied and found that the youngest age was 12 years for teenage mother and 11 years for first sexual intercourse [2] [3]. One of the causes of increased teenage pregnancy and sexual intercourse at younger age could be the family problems. The 11-15 years old adolescents are early-secondary school students who cannot rely on themselves. They need supports for food, money, study and psychological care from their families. When the families have problems, they will be psychologically affected, such as stress, sorrow or unhappiness. If the adolescents cannot cope or adapt with the situation, they may want to meet friends, go out at night, fashion dress, watch pornography and have premature sexual intercourse. These behaviors are sex-risk behaviors [4][5]. The researchers expect that the sex-risk female adolescents could have family problems and the

problems should be identified. Samut Songkram Province is one of the provinces in Thailand and has the highest teenage pregnancy rate of 21.88 % in 15-19 years old adolescents [1]. Therefore the researchers are interested in family problems of sex-risk female adolescents of early-secondary school students at a high school in Samut Songkram Province and the result data could be used by those concern to solve the problems.

OBJECTIVE

To study family problems of the sex-risk female adolescents of early secondary school students at a high school in Samut Songkram Province.

METHODOLOGY

There were 2 steps of methodology.

Step 1 Identify female students of early secondary school students who were in sex-risk group at a high school in Samut Songkram Province by using social dimension screening.

Research methodology of step1

1. Study of sex-risk behavior data from documents and researches concerning sex risk behaviors to make conclusion and construct the risk behaviors in social dimension aspect for 6 items and another 8 general items.

2. Distribution of the constructed social dimension questionnaires to 1530 male and female early secondary school students from 36 classrooms of a high school in Samut Songkram Province and had each student identify friends who had the behaviors of the 14 items.

3. Analysis of data to identify the sex-risk students by content analysis. All name lists of friend-identified female students were enumerated for frequency. The sex-risk students included the students who were identified at least 1 item from 6 items of sex-risk behavior and from 2 or more friends. The name lists were confirmed by classroom teachers. Male students who were identified to have many girlfriends were assigned to participate in the program to create ethical atmosphere but were not statistically analyzed. The classroom teachers were asked to protect the students' rights and keep the name lists confidential.

The result of screening: there were 89 female students who were in sex-risk group and 11 male students who were in sex-risk group but were not included for the samples.

Step 2 Study family problems of sex-risk female students

Descriptive research.

The samples were 89 female students who were in sex-risk group selected by social dimension screening in step 1.

Research tools:

Questionnaires for data collection were constructed by the researchers after literature review. They were consisted of 2 parts. Part 1- General data of the sex-risk female adolescents. Part 2 - Questionnaires to evaluate family problems of sex-risk female adolescents consisted of 19 items of 3 true value scales questions: very true, partly true and not true. Content validity of the questionnaires was tested by 3 experts in mother and child and the CVI (content validity index) was 0.81. The questionnaires were tried out with 30 female students who were not in the samples group. The Cronbach alpha coefficient yielded reliability of 0.89.

Data collection:

With permission from the school principal, the questionnaires were distributed by classroom teachers to the name lists from step 1.

Protection of samples right:

The researchers presented research proposal to the Human and Animal Ethics Committee, Suan Sunandha Rajabhat University for approval. After approval, the researchers asked the school principal for permission to conduct the research and asked the school teachers to collect the questionnaires. They were briefed for research objective, methodology, confidential protection of the samples and the result of research without names of the samples and school.

Data analysis:

1. Personal data of sex-risk female adolescents were analyzed by percentage
2. Data of family problems of sex-risk female adolescents were analyzed by percentage, frequency by numbers and percentage.

RESULTS

1. Personal data of sex-risk female adolescents of early secondary school students at a high school in Samut Songkram Province showed 39.3% were in class Matayom 3 (from Matayom 1 to 3), 30.2% had lower than 2 grade point average (GPA), 30.3% had 2 brothers or sisters in family, 46.6% had fathers who were 40-49 years old, 54.7% had mothers who were 30-39 years old, 34.1% had father who finished Matayom3, 28.6% had mother who finished Matayom3, 65.4% had father who worked as employees, 58.8% had mother who worked as employees, 43.8% stayed with parents, 41.6% had family status of living together and 41.6% had family status of separation.

2. Family problems of each sample were enumerated individually. The results showed that there were 2 samples who had 5 family problems, 5 samples who had 4 family problems, 4 samples who had 3 family problems, 7 samples who had 2 family problems, 30 samples who had 1 family problem and 2 samples who had no family problems. The total numbers were 48 from 89 samples who had 1-5 family problems (53.9%)

Table 1
Family problems of sex-risk female adolescents of early secondary school students at a high school in Samut Songkram Province as of 3 true value scales (n=89)

Rank	Family problems	Very true		Partly true		Not true	
		n	%	n	%	n	%
1	Father had new spouse	22	24.7	11	12.4	56	62.9
2	Mother had new spouse	16	13.6	9	10.1	64	71.9
3	mother worked outside with little time to talk to her children	14	15.7	22	24.7	53	59.6
4	father worked outside with little time to talk to his children	13	14.6	31	34.8	45	50.6
5	father and mother often quarreled	13	14.6	31	34.8	45	50.6
6	father was alcoholic	8	9	27	30.3	54	60.7
7	father had a lot of debts	3	2.5	24	26.9	62	69.6
8	father scolded frequently and not polite to children	3	3.4	33	37	53	59.6
9	Father was drug addict	2	1.7	7	7.8	80	89.8
10	mother scolded frequently and not polite to children	2	2.2	25	28.1	62	69.7
11	Parents did not use reason to raise children	2	2.2	17	19.1	70	78.7
12	Father was a gambler	1	1.1	20	22.5	68	76.4
13	Father liked to go out at night	1	0.8	16	17.9	72	80.9
14	Mother was a gambler	1	1.1	10	11.2	78	87.6
15	Mother was alcoholic	1	1.1	10	11.2	78	87.6
16	Mother had a lot of debts	1	1.1	19	21.3	69	77.5
17	Mother liked to go out at night	1	1.1	10	11.2	78	87.6
18	mother was drug addict	0	0	0	0	89	100
19	Parents were poor, could not afford children school fee	0	0	13	14.6	76	85.4

3. Family problems of 89 sex-risk female adolescents of early secondary school students at a high school in Samut Songkram Province showed that there were 5 highest ranks from 19 items with 49.4% admitted to very true and 30.4% admitted to partly true. The 5 highest ranks were father worked outside with little time to talk to his children (n=44), father and mother often quarreled (n=44), father scolded frequently and not polite to children (n=36), mother worked outside with little time to talk to her children (n=36), father was alcoholic (n=35), father had new spouse (n=33), father had a lot of debts (n=27) and mother scolded frequently and not polite to children (n=27).

There were 18 items from 19 items that 89 sex-risk female adolescents of early secondary school students at a high school in Samut Songkram Province admitted to very true and partly true. Only the item of mother was an addict that no samples admitted to very true or partly true.

The 89 sex-risk female adolescents of early secondary school students at a high school in Samut Songkram Province admitted 5 highest ranks of family problems to very true from 24.7-14.6% and admitted to 5 highest ranks of family problems to very true and partly true from 49.4-30.3%. The 8 items from 19 items were:

- 1) Father had new spouse
- 2) Mother had new spouse

- 3) Father and mother often quarreled
- 4) Father scolded frequently and not polite to children
- 5) Father was alcoholic
- 6) Father had a lot of debts
- 7) Mother worked outside with little time to talk to her children
- 8) Father worked outside with little time to talk to his children

Table 2
Family problems of sex-risk female adolescents of early secondary school students at a high school in Samut Songkram Province as of very true and partly true scales (n=89)

Rank	Family problems	Very true + partly true		Not true	
		n	%	n	%
1	Father worked outside with little time to talk to his children	44	49.4	45	50.6
2	Father and mother often quarreled	44	49.4	45	50.6
3	Father scolded frequently and not polite to children	36	40.4	53	59.6
4	Mother worked outside with little time to talk to her children	36	40.4	53	59.6
5	Father was alcoholic	35	39.3	54	60.7
6	Father had new spouse	33	37.1	56	62.9
7	Father had a lot of debts	27	30.3	62	69.6
8	Mother scolded frequently and not polite to children	27	30.3	62	69.7
9	Mother had new spouse	25	23.7	64	71.9
10	Father was a gambler	21	23.6	68	76.4
11	Mother had a lot of debts	20	22.4	69	77.5
12	Parents did not use reason to raise children	19	21.3	70	78.7
13	Father liked to go out at night	17	18.7	72	80.9
14	Parents were poor, could not afford children school fee	13	14.6	76	85.4
15	Mother was a gambler	11	12.3	78	87.6
16	Mother was alcoholic	11	12.3	78	87.6
17	mother liked to go out at night	11	12.3	78	87.6
18	Father was drug addict	9	9.5	80	89.8
19	Mother was drug addict	0	0	89	100

DISCUSSION

The research results of family problems of 89 sex-risk female adolescents of early secondary school students at a high school in Samut Songkram Province showed that they admitted the problems were very true with 5 highest rank items (24.7-14.6%) and admitted to very true and partly true with 5 highest rank items (49.4-30.3%). The 8 problems from 19 problems were:

- 1) Father had new spouse
- 2) Mother had new spouse
- 3) Father and mother often quarreled
- 4) Father scolded frequently and not polite to children
- 5) Father was alcoholic
- 6) Father had a lot of debts

- 7) Mother worked outside with little time to talk to her children
- 8) Father worked outside with little time to talk to his children

The above problems reflected that the sex-risk female adolescents of early secondary school students at a high school in Samut Songkram Province mostly came from the families with poor relationship of parents, especially fathers, and poor economic status. Parents should have good relationship to be good models and should have good economic status to meet basic needs of adolescents. Children should be raised from warm and loving families. If the children were raised from parents who did not have time for children, did not give mercy and love, the children would feel lonely, not wanted by others and not being a family member. There was no one to teach, advice or care. These feelings would be with them when they became adolescents. It could reflect poor grades in school, isolation from friends, attached to the ones who had similar experiences and led to unintentional sexual intercourse [6][7]. It was consistent with Vanindanonda, N. [5] who found the important factors of psychological characteristic and behavioral deviation of adolescents which came from family relationship between parents, children and parents or between children. The father and mother who often quarreled but still stayed together would badly cause stress, psychological effect and behavior to children. They would have anxiety, poor social adaptation and became aggressive. In contrary, if the children were with the parents with good relationship, they would grow up with good mental health, good mental and social adaptation and with confidence of future life. The family problem that parents scolded or not polite to children could turn adolescents to be sex-risk group. Therefore good communication between parents and children, trust, counseling and sharing would make adolescents stable, flexible and control of emotion and behavior to avoid sex-risk behavior. The main family characteristics of adolescents from this sample were not warm, both parents father and mother had new partners. Teens feel lack of dependence when teens feel incomplete was not enough, they would to seek happiness and turned to seek a new person or boy friend for fulfilled in love. That led to risk of sexual relations[6][7].

CONCLUSION

The research results of family problems of the sex-risk female adolescents of early secondary school students at a high school in Samut Songkram Province showed that they admitted the problems were very true (24.7-14.6%) and admitted to very true and partly true for the problems of: 1)Father had new spouse 2)Mother had new spouse 3) Father and mother often quarreled 4) Father scolded frequently and not polite to children 5)Father was alcoholic 6) Father had a lot of debts 7) Mother worked outside with little time to talk to her children and 8) Father worked outside with little time to talk to his children.

RECOMMENDATION

There should be analytical study comparing families of sex-risk female adolescents group and normal group to evaluate whether the present situation of early sexual intercourse and teenage pregnancy is related to family problems.

ACKNOWLEDGMENTS

This study was supported by the grant from Research and Development Institute, and Funding form Personnel Development Center, Suan Sunandha Rajabhat University (SSRU), Thailand. The researcher gratefully acknowledges SSRU and the College of Nursing and Health.

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THE RESULTS OF THE NUTRITIONAL MONITORING PROGRAM AT ROUMATUL COMMUNITY BANGKOK

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ABSTRACT

Nutrition can prevent non communicable disease including diabetes mellitus, and stroke, which were cause of death and disability. This participatory action research aimed to study how to control daily food consumption for self-efficacy, self regulation and self-care (3S) to prevent and control diabetes and hypertension with a nutrition monitoring program. The purposive sample of 96 people from the Roumatul community in Prawet District, Bangkok, Thailand were people who at risk, with diabetes or high blood pressure, and enrolled in the 3 month program. Data collection was by self-reported behaviors and interviews by visiting nurse. Descriptive statistics and pair t-test were used to analyze personal data and test the difference of variables before and after the program. Most of the sample were a female, with a high school education, entitled with a Gold Card for healthcare in Bangkok, diabetes mellitus 34.8%, and high blood pressure 20.8%. Obesity was 33.3 % and nearly the half of sample had high risk behaviors, eating sweet and/or salty 46.7 %, lack of exercise, and 11.5 % were smokers. At the end of program, the results showed significant diminishment of the body mass index (BMI), blood sugar by dextrose (DTX), systolic and diastolic with $p < 0.001$. In contrast, the scores after self-nutritional monitoring showed higher significance with $p < 0.001$ from 3 S (Self-efficacy), Self-regulation and Self-care. Most participants had better self care consumption than before enrollment in program 88.5% and blood pressure decreased 64.6%, weight loss and BMI decreased 53.1% and 49.0%, respectively. The results point out that there was a change in a better direction and health status also changed to the better. Most members were satisfied at a high level of 95.8%. Suggestions for the next nutrition monitoring program should to enhance motivation and nutritional skills for Dietary Approaches to Stop Hypertension (DASH) diet so that nutrition can prevent other Non-Communicable Diseases (NCDs) and decrease physical, mental, social, and economic loss.

Keywords- nutrition monitoring, NCDs, diabetes mellitus, hypertension, participatory action research

INTRODUCTION

Hypertension and diabetes are a chronic non-communicable diseases that are major public health problems in the world, including Thailand. The current situation of diabetes incidence is increasing. According to data from the International Diabetes Federation.^{1,2} 285 million people are reported to have diabetes worldwide, and it had estimated that there will be a significantly higher number of people with diabetes, more than 435 million people, in 2030, if no efficient action is taken to prevent and control it. Thailand is facing diabetes too. Data from the Bureau of Policy and Strategy Ministry of Public Health reported that 7,019 people died from diabetes in 2009, or about 19 people per day. A survey of the health status of people aged 15 years and over Thailand of the year 1996-1997 compared to the three years from 2003 to 2004 reported the prevalence increased from 4.4 percent to 6.9 percent for the fourth time. During the year 2008-2009, there was the same prevalence of diabetes at 6.9 percent.

Diabetes and hypertension are a common cause of illness, premature death, and complications to the eyes, kidneys, nervous system, heart and stroke.^{1,2} A survey of the health status in Thailand found four of ten people with diabetes did not know they had diabetes before. For those who have been diagnosed with diabetes by a

physician, 3.3 percent were not treated, and only 28.5 percent were treated. Only 28.5 percent could control blood sugar levels less than 126 milligrams per deciliter. For those who are at risk from diabetes and asymptomatic, reducing risk factors and treatment at an early stage were very important as well as encouraging people with diabetes to take care of themselves properly. That will reduce and slow down the disease and the effects. Diabetes and hypertension were caused by several common factors that can be prevented. Behavior modification, eating reducing the fat diet and exercise can prevent diabetes mellitus, cardiovascular disease and stroke.^{2,3,4} Now, the stroke situation impacts global health with 17 million stroke patients dead from stroke, 6.5 million stroke survivors with disabilities. The death rate from stroke in Thailand per 100,000 population in the whole country in 2013-2015 was 36.13, 38.66 and 42.62, respectively. The death rate from stroke increased every year. In addition, the overall death rate in the country in 2014 was 352.30. Information from the Bureau of Policy and Strategy Office of the Permanent Secretary, Ministry of Public Health^{3,4} stated that 2016, was the year of "Face the facts: stroke is treatable." It emphasized the importance of stroke and recognized the initial symptoms and is timely treatment.^{4,5}

Prevention of NCDs were challenged in this era: how are we to encourage risk groups and people with diabetes or/and hypertension to understand and realize the threat of disease before complication occurred, knowing the causes of disease, knowing the early warning signs of diabetes and other NCDs, knowing how to prevent and delay diabetes, learn self-care on controlling and preventing complications that arise as a consequence.

One hopes that the nutritional monitoring program is the one to challenge and minimize chronic health problems from NCDs.

OBJECTIVES

The participants who attended this program were changed as follows:

1. Increase efficacy of self assessment of daily food consumption.
2. Increase self regulation for controlling daily food consumption and prevention of NCDs (diabetes hypertension and obesity).
3. Increase the self-care behaviors for controlling and preventing NCDs (diabetes hypertension and obesity).

RESEARCH DESIGN AND SAMPLES

The research designed used Participatory Action Research (PAR) with purposive sampling 96 participants at the Raomatul Community in Pravate district, Bangkok, who were at risk for being over weight, obesity, diabetes or high blood pressure. They enrolled in the participatory learning Nutritional Monitoring Program from March 2014– June 2014, for creating 3 S (self efficacy, self regulation, and self care) as in the steps shown in figure 1.

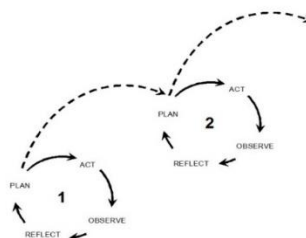


Fig. 1 Shows the circles of the operating part of the Nutritional Monitoring Program

Research design and samples

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The plan of activities for promoting nutritional monitoring and behavioral modification in each time were in the following:

The first meeting activity

- Participants learned about creating self awareness, self assessment of nutrition and NCDs : diabetes mellitus, hypertension, obesity, metabolic syndrome.
- Taught about how to assess their nutritional status : body weight, BMI and daily food consumption and evaluated the self-efficacy for changing their food habit.
- Initial health assessment activities.
- Group discussion, participation in solving problems of the participants.

The second meeting activity

- To improve understanding of nutritional health behavior modification .
- Training activities to educate about health behavior modification in the diet, exercise, and the empowerment to self to the self-regulate.
- Group discussion demonstration and practicing.

The third meeting activity

- Continuing Promoting self- efficacy, self- regulation.
- Group activity for learning about the DASH diet, how to design their daily food intake.
- Evaluation activities individually by phone and home visiting by nurse.

The fourth meeting activity

- Assessment activity after participating and posttest.
- Summary of the activities and the benefits of participating.
- Discussion and evaluation the program, awards and souvenirs
- Program Closed.

ETHICS

The research takes into account the right of the sample. The sample was informed of the objectives of the research process and research. The clarification of the right to accept or refuse to participate in this research program was given, without affecting in any way the lesson. In addition, during the research if the samples were unwilling to participate in the research to completion, they could terminate their participation without affecting the learning of information obtained from this research which was confidential. Presentation of data was presented in an overview. There was not disclosure of the name and surname when samples were willing participants. The research sample signed a consent form to participate in the study (informed consent form).

RESULTS

Most of the sample were female, with a high school education, entitled to a Gold Card for healthcare in Bangkok, diabetes mellitus 34.8% and high blood pressure 20.8%. Obesity was 33.3 % and nearly the half of

sample had high risk behavior of eating sweet and salty food 46.7 %, lack of exercise, and 11.5 % were smokers. At the end of program the results showed significant diminishment of body mass index (BMI), blood sugar by DTX, systolic and diastolic with $p < 0.001$. In contrast, the scores after self-nutritional monitoring showed higher significance with $p < 0.001$ which were 3 S (Self-efficacy), Self-regulation and Self-care. Most participants showed better self care consumption than before 88.5% and blood pressure decreased 64.6%, weight loss and BMI decreased 53.1% and 49.0%, respectively. Nutritional outcomes of participants in this program were change in body weight, body mass index (BMI) and blood pressure changed for better health.

Most of participants had highest satisfaction with this program, 95.8 percent, as in table 1.

Table 1
Numbers and percentages of the sample (n = 96)

Personal Data	n	%	Personal Data	n	%
Sex Male	22	22.9	Blood pressure change (Systolic) mm. Hg		
Female	74	77.1	Unchanged	8	8.3
Age (years)			Decrease	62	64.6
30 -39	6	6.3	Increase	26	27.1
40-49	20	20.8	Weight change		
50-59	20	20.8	Unchanged	36	37.5
>60	50	52.1	Decrease	51	53.1
Education			Increase	9	9.4
High school/vocational	90	93.7	Blood pressure change (Diastolic) mm. Hg		
Bachelor	6	6.3	Unchanged	4	4.2
Right of Medical Care			Decrease	56	58.3
Gold Card	77	80.2	Increase	36	37.5
Social Security	16	16.7	BMI		
Government	3	3.1	Unchanged	40	41.7
The risk to Diseases (n=72)			Decrease	47	49.0
High Blood Pressure	15	20.8	Increase	9	9.4
High Blood Glucose Level	25	34.8	Person with increasing the scores of 3S		
Cerebrovascular disease	8	11.1	Self efficacy	90	93.8
Overweight	24	33.3	Self regulation	91	94.8
Participants with Diseases(n=81)			Self-care behaviors	85	88.5
Hypertension	15	20.8	Satisfaction of the Program		
Diabetes Mellitus	25	34.8			
Cerebrovascular disease	8	11.1	Moderate	4	4.2
Obesity	24	33.3	Extremely Satisfaction	92	95.8

Table 2

Mean, standard deviation (SD), Pair t-test and statistical significant level of before and after the program (n = 96)

Data	\bar{X}	S.D.	\bar{D}	S.D.	t-test	Sig.(1-tailed)
BMI Before After	26.28 25.8	5.62 5.36	0.444	.916	4.755***	0.0000
DTX Before After	129.01 110.51	42.72	18.50	28.569	6.345***	0.0000
Systolic Before After	136.26 129.63	17.44 15.57	6.56	12.33	5.521***	0.0000
Diastolic Before After	84.47 80.55	13.44 9.82	3.927	13.874	2.774**	0.007
Self-Efficacy (score) Before After	12.87 16.88	2.62 2.00	-4.010	2.498	-15.728***	0.0000
Self-Regular(score) Before After	12.76 17.13	2.87 2.24	-4.375	2.692	-15.923***	0.0000
Self-Care (score) Before After	15.63 23.84	3.36 3.06	-8.479	4.289	-19.368***	0.0000

*** Significant level<0.001 ** Significant level<0.01

Table 2 shows the mean of BMI, DTX, systolic, diastolic blood pressure after the program decreased with a statistical significance difference ($p<0.001$) and ($p<0.01$) and the variable of 3 S (Self-efficacy, Self - regular and self-care increased with a statistically significant difference ($p< 0.001$).

Data analysis from interviewing data

Analysis of qualitative data showed patterns of daily food consumption for prevention and controlling of diabetes and other NCDs on a daily behavior modification, daily eating, exercise and stress management, the study concluded by telling the members about controlling diabetes risk by what, when, and how. The result concluded that most ate breakfast, increased intake of vegetables, tried to diminished sweets, did not eat sweet fruits, increased awareness of added seasoning, and cut down on salt and sugar in every meal. They regularly ate fresh fish, not salted fish or salted pickles.

DISCUSSION

The result from this research showed the characteristics of the participants with diabetes and hypertension: most of them were female, with a high school education, and low income. These results were in accordance to the study of Intharakamhang, A. et al. (2010)⁵ "Study of Administration and Evaluation to Health Adaptation of Health Center in Bangkok 21 projects in 2009" found that DM people were female 67.68% and male 32.32 %, compared with the World population (2015), DM people were female 199.5 million and male were 215.2 million, contrasted with this study and findings of Intharakamhang, A. et al. study.⁵ The difference may be from race or in many areas including economic status, life style, nutrition, exercise, sleep and rest, and working.

Regarding nutritional variables the study showed that body weight, body mass index, decreased 53.1% and 49.0% respectively. These results were in accordance to the study of Intharakamhang, A. et al. (2010) "Study of administration and evaluation to the health adaptation of Health Center in Bangkok 21 projects

in 2009” found that participation group decreased BMI 65.36% , BP 61.45%. It mean that they could modify their nutritional behavior with good self-care so that they could control daily food consumption from the participation in nutrition learning. Nutrition education entails more than just teaching or learning. It involves a combination of techniques and methods, all of which are aimed at increasing knowledge, skills and confidence in order to make appropriate healthy choices and establish new habits.

Self-management could improve health status.^{6,7} The self management program to control and prevent DM in daily life found that participants ate more vegetable and stopped eating deserts, all the sweet fruits, cooked without sugar or just a little bit, ate fish daily. These results were also in accordance to the study of Sumnuk, N. et al.^{8,9} (2011) “Study of effective program modification behavior people health risk group to hypertension in community, Pakpanung district, Nakhon Sri Thammarat” found that participants gained more knowledge, activities, exercises “Study of behavior modification in risk group to DM and hypertension” found that means of self management behavior of eating and exercise increased significantly after the study. The most common lifestyle factors in Thailand which risked metabolic syndrome were reduced physical activity, lack of self control, and being overly courteous by not eating a healthy diet.^{4,13,14,15} The lack of control of their food intake was the key to prevention.^{10,11,12} Thus in this program, most participants increased self regulation. That was one guideline for controlling and preventing the chronic disease.

With participation in the learning nutrition monitoring program, it was hoped, that it would result in some changes in self care, but these might not be altogether expected. People may decide not to make changes. This is called informed choice.

CONCLUSION AND RECOMMENDATIONS

This research used participatory action research to promote and modify health behaviors which focused on the development of activities encouraging participants to gain skills and knowledge through practical action. A sustainable approach was organized in accordance with activities that blend into everyday life, obtaining social support to encourage volunteerism, good personal health care, and some extra incentive to participate. These factors resulted in trust and cooperation from members and communities.

Recommendations

In order to effectively monitor other programs, health professionals must have nutrition knowledge and skills and establish good relationships with people with diabetes, hypertension and care providers. Within their role and scope of practice, all healthcare professionals working in the specialty of nutritional monitoring are responsible for providing nutritional education. In addition to the information about diabetes which changes quickly due to research, continuous learning is essential. Health professionals have a responsibility to update their knowledge and reflect on their practice in order to constantly improve the education and care they provide.

ACKNOWLEDGMENTS

This study was supported by the grant from Research and Development Institute, and Funding form Personnel Development Center, Suan Sunandha Rajabhat University (SSRU), Thailand. The researcher gratefully acknowledges SSRU and the College of Nursing and Health.

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APPROPRIATE OCCLUSION PROPORTIONS FOR CHINESE CHARACTERS

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ABSTRACT

To attract attention in visual communication design, occluding a portion of the text is a commonly applied design technique. The main objective of this research is to investigate the most appropriate occlusion proportion for Chinese characters. The researchers occluded each character in the sample set from each of the four sides using the three different proportions of $\frac{1}{9}$, $\frac{2}{9}$, $\frac{3}{9}$. This variable was tested to find which occlusion proportions are most appropriate, most aesthetic and easiest to recognize. The experimental sample comprises two structures of most frequently seen characters, for a total of 18 characters. All of them were occluded from each of the four sides (top, bottom, left, right), making a total of 72 images. A total of 58 students participated in evaluating the samples by viewing them one character at a time with each of the three occlusion proportions. The participants ranked their top three choices for each occlusion proportion with 1 representing most appropriate, 2 for second most appropriate and 3 for third most appropriate. After completing this section of the experiment, participants completed a printed questionnaire, answering questions related to their choices of most appropriate, most aesthetic and easiest to recognize occlusion proportions. The ranking data was analyzed using the Wilcoxon test. The structured data of the questionnaire was analyzed using the Chi-square test. The results reveal that for the aspect of appropriateness, occlusions of $\frac{1}{9}$ and $\frac{2}{9}$ are more appropriate than $\frac{3}{9}$. It is easiest to recognize characters with occlusion of $\frac{1}{9}$, but this proportion lacks the aesthetic that arises from a defect or missing piece, while an occlusion of $\frac{2}{9}$ retains enough features to be recognized and is perceived to have a stronger sense of design.

Keywords: Chinese characters, occlusion proportion, character recognition, aesthetics

1. INTRODUCTION

Characters are one of the major elements in information design. In terms of design, they are not merely characters, but can also be treated as images for processing (Leeuwen, 2005) and expressions of emotion (Malik, Aitken & Waalen, 2016) that render communication more interesting. Partial occlusion of characters to make them incomplete (Luijckx, Thillou, & Gosselin, 2006) is an approach involving deliberate expression for specific purposes in design practice. Designers sometimes amplify the partial occlusion of a single character or word in poster or card design, or deliberately occlude part of the strokes of the product name on packaging to create an imperfection, with the aim of encouraging people to participate in recovering the missing information and thereby reinforcing their impression (Zeigarnik, 1999).

Generally, such methods are employed according to the designers' intuition, without empirical evidence from users' perception to provide a basis for clear designs. This study investigated the differing structures of

Chinese characters to determine the optimal occlusion proportion that retains the characters' features and aesthetic, which will assist designers in deciding the optimal occlusion proportion and position during character designs and reduce exploration time and uncertainty.

The diverse composition and stroke complexities of Chinese characters lead to a rich variation of occlusion techniques that can be applied to the text vertically or horizontally, as well as in oblique or rotated manners. Most Chinese characters are composed of at least two other characters (Hoosain, 1992), and the reading direction of Chinese text can be horizontal (left to right or right to left) and vertical (top to bottom). Therefore, in deciding the occlusion positions for characters, their reading directions (horizontal or vertical), their connections with the previous words, and the possibilities of distinct character structures (component compositions) and occlusion positions affecting each other should all be taken into account.

Traditional Chinese characters are mainly constituted of radicals and components. From the perspective of font design, the patterns of composition structures for traditional Chinese characters can be divided into the following eight types (Wu, & Shiu, 1995; Chen, 1974): 1. An inseparable single word, such as *mi* (米); 2. Two components (right and left), such as *cheng* (誠); 3. A single left component and two vertical components on the right, such as *fu* (福); 4. A single right component and two vertical components on the left, such as *jing* (敬); 5. Two vertical components, such as *ji* (吉); 6. Two horizontal components above and a single component below, such as *he* (賀); 7. Three vertical components, such as *suan* (算); 8. Three horizontal components, such as *yao* (邀). According to the principles of font design, the proportions of components in a character should be determined based on the location of the radical. For example, if the radical of the character is on the left, then the rest of the components are on the right, thus forming a left-right relationship, such as *cheng* (誠), *fu* (福), and *yao* (邀); similarly, if the radical is located on the right, then the remaining components are on the left, such as *jing* (敬). If the radical is a "crown" that is located above the remaining components, an up-down relationship is formed, such as *suan* (算); conversely, if the radical is the lower component of the character, then the remaining components are above it, such as *ji* (吉) and *he* (賀).

Research has indicated that the identification of the upper half of a word or letter, as well as the beginning of the word, is more crucial than identification of the lower half (Rayner & Kaiser, 1975); obscuring the upper left section of a character causes difficulties in identification (Peng, 1982); and the most readable strokes are in the upper left corner (Saito, 1986; Huey, 1908, 1968; Flore D'Arcais, 1994). Tseng et al. explored the effects of stroke omission in characters, revealing that more respondents were able to correctly identify the characters with fewer stroke omissions, and an increase in omissions resulted in more wrong answers from the participants. Yan et al. (2011) investigated the effects of stroke order on Chinese character identification, requesting participants to read the text while an eye tracker observed any interruptions. The results demonstrated that Chinese characters with 15% stroke removal were as readable as those without any stroke removal; retaining the font structure was the easiest when 30% or more of the strokes were removed, whereas characters with their beginning strokes removed were the most difficult to identify.

Therefore, this study proposed two hypotheses: 1. Occlusion proportion is related to character composition; 2. The most appropriate occlusion proportion for the two character structures should range between $\frac{1}{9}$ and $\frac{3}{9}$ of the width at each side of the text.

2. METHOD

2.1 Experiment design

The independent variable for the experimental design was the “occlusion proportion.” In other words, three distinct occlusion proportions ($\frac{1}{9}$, $\frac{2}{9}$, and $\frac{3}{9}$) were adopted at each position of the character to examine their effects on the dependent variables, namely, appropriateness, aesthetics, and identifiability. This enabled identifying the occlusion proportions that were “most appropriate,” “most aesthetic,” and “easiest to recognize.” First, participants were requested to rank the most appropriate occlusion proportion for the same characters juxtaposed on the same screen with three differing occlusion proportions in the same position, with “1” being the most appropriate, followed by “2” and “3.” The experiment sampled 18 words with four occluded positions for each word, for a total of 72 images. After completing the experiment, the participants then answered a printed questionnaire.

The ranking data collected from a ranking experiment for selecting the most appropriate occlusion proportion was analyzed using the nonparametric Wilcoxon signed-rank test, and the participant questionnaire responses were analyzed using the chi-square test. The results were then cross-compared, whereby the most appropriate, most aesthetic, and most easily recognizable occlusion proportion was determined by referencing the reasons provided by the participants.

2.2 Participants

The participants were 46 students from Ming Chuan University and 12 students from Tatung University, for a total of 58 participants (11 male, 47 female; $M = 20.1$ years old, $SD = 0.97$).

2.3 Stimuli

Citing Miyoko Nakano (Sugiura, 2006), a Japanese-Chinese litterateur, Sugiura Kohei noted that Chinese characters are formed in squares. Thus, a Chinese character is still recognizable if its center is occluded, but is less identifiable if its four corners are obscured. Therefore, this study selected characters with vertical (top-middle-bottom) or horizontal (left-middle-right) structures to conduct experiments in which stroke occlusion was applied to each side of a character.

This stage of the experiment was based on research by Wu (1987), who compiled more than 4000 high-frequency words; from these, 18 words belonging to two distinct structures were chosen. The structures consisted of nine vertical words with an up-down structure and nine horizontal words with a left-right structure. The vertical words involved *zhuo* (桌), *chang* (常), *xi* (喜), *xun* (尋), *yi* (意), *ye* (葉), *suan* (算), *mai* (賣), and *bao* (暴); whereas the horizontal words entailed *chao* (潮), *wei* (衛), *shu* (樹), *ban* (辦), *li* (例), *xie* (謝), *yao* (邀), *zhi* (職), and *xiang* (鄉). The literature indicates that the Ming typeface is relatively easy to identify, thus bolded Ming was adopted for this experiment. The characters were placed within 9-cm squares that were divided into nine equal parts horizontally and vertically. The characters were occluded from each of the four

sides (top, bottom, left, and right) using three distinct proportions of $\frac{1}{9}$, $\frac{2}{9}$, and $\frac{3}{9}$. The same characters with three occlusion proportions at the same location were then placed on the same screen, for a total of 72 images. The vertical and horizontal characters appeared randomly, with each character in a 9-cm square with a white background; the distance between each word was 2.5 cm and the character squares were set against a black background. (Figure 1).

Figure 1 Sample cases for two character structures with distinct positions and occlusion proportions

	Character with vertical structure				Character with horizontal structure			
Samples								
Occlusion Position	Top : $\frac{1}{9}, \frac{2}{9}, \frac{3}{9}$	Bottom : $\frac{1}{9}, \frac{2}{9}, \frac{3}{9}$	Left : $\frac{1}{9}, \frac{2}{9}, \frac{3}{9}$	Right: $\frac{1}{9}, \frac{2}{9}, \frac{3}{9}$	Top : $\frac{1}{9}, \frac{2}{9}, \frac{3}{9}$	Bottom : $\frac{1}{9}, \frac{2}{9}, \frac{3}{9}$	Left : $\frac{1}{9}, \frac{2}{9}, \frac{3}{9}$	Right: $\frac{1}{9}, \frac{2}{9}, \frac{3}{9}$

2.4 Apparatus

IBM computer with a ViewSonic17-in screen (width \times height = 34 cm \times 27.2 cm) and a resolution of 1024 \times 768 pixels were used. The sampled characters were shown using PowerPoint and supplemented by printed questionnaires.

2.5 Procedure

The experiment was conducted in groups of three and four participants in a fixed laboratory, with each participant working on a laptop individually. First, the researchers explained the purpose and conduct of the experiment, and participants were allowed to practice pressing the answering buttons. When the experiment began, the participants were requested to sit upright approximately 45 cm away from the screen. Characters with three distinct occlusion proportions of $\frac{1}{9}$, $\frac{2}{9}$, and $\frac{3}{9}$ at the same position were shown on the screen from left to right. Participants were requested to fill in the rankings for the most appropriate occlusion proportion in the corresponding three brackets of the sampled words, in accordance with the numbers for each screen on the paper, with “1” being the most appropriate, followed by “2,” and “3” being the least appropriate. After the ranking was completed, the participants were requested to answer the printed questionnaire, whereby they were to select the occlusion proportions that were the “most appropriate,” “most aesthetic,” and “easiest to recognize” for each sampled character and provide the rationales for their selections.

3. RESULTS

3.1 Ranking of the Most Appropriate Occlusion Proportions

Based on the participants' data for the most appropriate ranking, each character with the vertical or horizontal structure was occluded on the same side in the same proportion, and the scores obtained were averaged accordingly. For example, the vertical and horizontal structures each contained an average of 58 records of characters occluded from the top with the proportions of $\frac{1}{9}$, $\frac{2}{9}$, and $\frac{3}{9}$; thus, the four sides of a character with three occlusion proportions should be taken into account for the average data of a single character. The data of the $\frac{1}{9}$, $\frac{2}{9}$, and $\frac{3}{9}$ occlusions for the four sides of each word under the same structure were then added and the average was obtained. For example, for the ranking data of each word under the vertical and horizontal structures with $\frac{1}{9}$ occlusion at every side, the serial numbers “top $\frac{1}{9}$,” “bottom $\frac{1}{9}$,” “left $\frac{1}{9}$,” and “right $\frac{1}{9}$ ” were assigned and the average was obtained. The average values for vertical characters with a $\frac{1}{9}$

occlusion proportion at each side were referred to as VS1; those for characters with a $\frac{2}{9}$ occlusion proportion at each side were abbreviated as VS2; and those for characters with a $\frac{3}{9}$ proportion at each side were abbreviated as VS3. The horizontal characters were processed in a similar manner and abbreviated as HS1, HS2, and HS3. Finally, the data for $\frac{1}{9}$, $\frac{2}{9}$, and $\frac{3}{9}$ occlusions under the two character structures were compared using the nonparametric two-related-samples test: VS1-VS2, VS1-VS3, VS2-VS3, HS1-HS2, HS1-HS3, and HS2-HS3.

Because the collected data ranked with “1” represented the most appropriate and “3” denoted the least appropriate, a lower average value indicated a higher appropriateness. The analysis results are shown in Table 1, wherein the data for vertical words are as follows: VS1 ($M = 1.81$), VS2 ($M = 1.79$) < VS3 ($M = 2.32$). Pairwise comparison of VS1 and VS2 revealed a z score of $\square 0.84$, $p > 0.05$, indicating no significant difference between them. Comparing VS1 and VS3 yielded a z score of $\square 5.47$, $p < 0.05$, indicating a significant difference between them. Comparing VS2 and VS3 yielded a z score of $\square 6.41$, $p < 0.05$, which also indicated a significant difference between them.

Regarding horizontal characters, HS1 ($M = 1.78$), HS2 ($M = 1.79$) < HS3 ($M = 2.44$). Pairwise comparison of HS1 and HS2 revealed a z score of 0.22 , $p > 0.05$, indicating no significant difference between them. Comparing HS1 and HS3 produced a z score of $\square 5.53$, $p < 0.05$; whereas HS2 and HS3 yielded a z score of 6.047 , $p < 0.05$, demonstrating a significant difference between them. According to the results, the participants’ opinions of the occlusion proportions of $\frac{1}{9}$ and $\frac{2}{9}$ at each side of the characters under the vertical and horizontal structures differed nonsignificantly, but they were significantly different for the $\frac{1}{9}$ and $\frac{3}{9}$ occlusion proportions. Therefore, occlusions of $\frac{1}{9}$ and $\frac{2}{9}$ are more appropriate than that of $\frac{3}{9}$.

Table 1

Nonparametric Wilcoxon signed-rank test description statistics for the appropriateness ranking of occlusion proportions

	VS1-VS2	VS2-VS3	VS1-VS3	HS1-HS2	HS2-HS3	HS1-HS3
Z score	$\square 0.843$	$\square 6.410$	$\square 5.471$	$\square 0.223$	$\square 6.047$	$\square 5.536$
Asymptotic significance (2-tailed)	0.399	***0.001	***0.001	0.824	***0.001	***0.001

Note: VS1, VS2, VS3 represents the average scores ranked by the participants regarding the occlusion proportions of $\frac{1}{9}$, $\frac{2}{9}$, $\frac{3}{9}$ at each side of the characters in the vertical structure; HS1, HS2, HS3 represents the average scores ranked by the participants regarding the occlusion proportions of $\frac{1}{9}$, $\frac{2}{9}$, $\frac{3}{9}$ at each side of the characters in the horizontal structure.

3.2 Selection Results for the Most Appropriate, Most Aesthetic, and Easiest to Recognize Proportion

3.2.1 Chi-Square Analysis

After the participant’s ranking of the most appropriate character occlusion proportions, they were requested to answer the printed questionnaire in order to repeatedly test the consistency of their attitudes. A chi-square test was conducted because the data involved the participant counts regarding each occlusion proportion. The results of the chi-square test show that the most appropriate proportion were $\chi^2 = 35.72$, $df = 2$, $p < 0.05$; those of the chi-square test for the most aesthetic proportion were $\chi^2 = 13.89$, $df = 2$, $p < 0.05$; and those of the

chi-square test for the proportion that was easiest to recognize were $\chi^2 = 54.07$, $df = 1$, $p < 0.05$. The analysis revealed that the participants had significantly different responses for the three variables.

From Table 2, in terms of the most appropriate proportion, 40 participants believed that an occlusion proportion of $\frac{2}{9}$ at each side of the character was the most appropriate; namely, it was the most appropriate, easiest to recognize, and most aesthetic. Specifically, 30 of the participants expressed an aesthetic preference for an occlusion proportion of $\frac{2}{9}$. The majority of the participants maintained that an occlusion proportion of $\frac{1}{9}$ yielded characters that were the easiest to recognize, because this lesser occlusion retained the complete character shape and form. The occlusion proportion of $\frac{3}{9}$ was chosen by only few participants because excessive obscurity led to difficulties in character recognition as well as subpar aesthetics.

Table 2 Description statistics for the three dependent variables—the most appropriate, aesthetic, and easiest to recognize proportion

		Observed count	Expected count	Residual
Most appropriate proportion	$\frac{1}{9}$	14	19.3	$\square 5.3$
	$\frac{2}{9}$	40	19.3	20.7
	$\frac{3}{9}$	4	19.3	$\square 15.3$
	Sum	58		
Most aesthetic proportion	$\frac{1}{9}$	7	19.3	$\square 12.3$
	$\frac{2}{9}$	30	19.3	10.7
	$\frac{3}{9}$	21	19.3	1.7
	Sum	58		
Easiest to recognize proportion	$\frac{1}{9}$	57	29.0	28.0
	$\frac{2}{9}$	1	29.0	$\square 28.0$
	$\frac{3}{9}$	no chosen	0	0
	Sum	58	0	0

3.2.2 Qualitative Data Analysis

The three semi structured questions were as follows. Based on the three distinct character occlusion proportions of $\frac{1}{9}$, $\frac{2}{9}$, and $\frac{3}{9}$: 1. Please select the “most appropriate” occlusion proportion; 2. Please select the “most aesthetic” proportion; 3. Please select the proportion that is the “easiest to recognize,” and specify the reasons for each of the answers chosen. In addition, a fourth open-ended question was included: Please describe the features that serve as the basis for recognizing the partially occluded characters. Except for question 4, the answers to the remaining questions by the 58 participants are just listed a few in Table 3

Table 3
Reasons for the choices concerning the most appropriate, most aesthetic, and easiest to recognize proportion

Q1–Most appropriate proportion	Q2–Most aesthetic proportion	Q3–Proportion that is easiest to recognize
Reasons for choosing occlusions of $\frac{1}{9}$	Reasons for choosing occlusions of $\frac{1}{9}$	Reasons for choosing occlusions of $\frac{1}{9}$
*It is the most essential for a character to be recognizable	*The character possesses some level of structure	*Other proportions result in the excessive occlusion of words and higher chances of mistaking them for other words
Reasons for choosing occlusions of $\frac{2}{9}$	Reasons for choosing occlusions of $\frac{2}{9}$	Reasons for choosing occlusions of $\frac{2}{9}$
*More moderate, and is more aesthetic than occlusions of $\frac{1}{9}$	*The character looks the most moderate on screen	* High readability
Reasons for choosing occlusions of $\frac{3}{9}$	Reasons for choosing occlusions of $\frac{3}{9}$	Reasons for choosing occlusions of $\frac{3}{9}$
*When identification features are retained, more occlusion leads to more optimal effects	*May mistake the word for others	no chosen

Note: These are part of the answers from the participants.

From Table 2, the number of responses indicated the frequency with which a proportion was chosen, whereas the text description further revealed which proportion was considered the most appropriate by the participants. The results showed that the $\frac{2}{9}$ proportion was most frequently selected. This was attributed to its suitability, aesthetics, and lack of occlusion of the essential radicals, which generated an appropriate form of occlusion according to a majority of the participants. In terms of the most aesthetic proportion, $\frac{2}{9}$ was chosen more frequently than $\frac{3}{9}$, although the gap between them was small. Participants who chose $\frac{2}{9}$ maintained that the resultant character looked more harmonious with an appropriate proportion, whereas those who preferred a proportion of $\frac{3}{9}$ stated that the characters produced had a greater sense of design, although the proportion may not be appropriate for some characters. In terms of the proportion that was the easiest to recognize, the occlusion proportion of $\frac{1}{9}$ accounted for 99% of the responses because lesser occlusion reduced the chances of mistakes in character recognition.

For the question that required participants to “describe the features that serve as the basis for recognizing the partially occluded characters,” because most of the participants’ opinions were repetitive, the key features mentioned by them are summarized as follows, namely, the composition of the characters, intuition, observation of character symmetry, radicals, conventional usage, structure of the character, and stroke styles. In particular, a majority of the participants mentioned that they identified the characters by observing the radicals.

4. DISCUSSION AND CONCLUSION

The results of the Wilcoxon signed-rank test, chi-square analysis, and printed questionnaire item responses showed that, concerning the appropriateness ranking, the occlusions of $\frac{1}{9}$ and $\frac{2}{9}$ are both appropriate for character design and are more optimal than $\frac{3}{9}$. Characters with an occlusion proportion of $\frac{1}{9}$ are easily recognized, but do not have the aesthetic defects caused by occlusions, whereas an occlusion proportion of $\frac{2}{9}$ retains the identifiable features of a character and exhibits a higher sense of design. These findings are similar to those of Yan et al. (2012), who revealed that characters with 15% stroke removal are as readable as

those without any stroke removal, although retaining the character structure is easiest with a stroke removal of approximately 30%. This indicates that >30% stroke removal is excessive and leads to an inability to maintain the character structure. Nevertheless, insufficient removal results in a high readability as if the character has not undergone any removal. The key point is that a complete character is certain to have higher identifiability, which is insufficient in terms of design effects because if character occlusion techniques are adopted, the character must possess both readability and aesthetics. Therefore, an appropriate proportion should account for the importance of easy identification and aesthetics.

When the rankings were compared with the participants' questionnaire responses, the latter clearly demonstrated that the occlusion of $\frac{2}{9}$ surpassed that of $\frac{1}{9}$ as the most appropriate proportion. A possible explanation for this is because of the differing investigation methods employed. During the participants' ranking experiment, the sampled characters with three types of occlusion proportions were juxtaposed on the screen, facilitating identification and comparison. The impressions from the experiment may also be extended to the questionnaire answers, although the investigation involved selective questions and mandatory options without any visual cues; the ranking data are presented as arithmetic means, whereas the questionnaire responses are displayed as participant counts, thus resulting in slight differences when comparing the ranking experiment and questionnaire analysis results.

In addition, the use of occlusion methods during design creative processes focuses on not only identifiability, but also expresses a sense of playfulness and attracts viewer attention. An occlusion proportion of $\frac{1}{9}$ lacks an aesthetic impression because of inadequate obscurity. For an occlusion of $\frac{3}{9}$, a character is still identifiable if only its right side is obscured, although the strokes of such a character might not be easily recognizable. Some participants stated that they recognized the characters by observing their radicals, indicating that radicals have a crucial effect on character recognition. These findings clearly reflect a relationship between character structure and orientation, and thus merit further exploration of relevant topics. Finally, from the perspective of the design profession and investigation results, an occlusion proportion of $\frac{2}{9}$ is recommended as the most appropriate for the vertical or horizontal occlusion of Chinese characters, and can also be used as a basis for the production of samples for subsequent research.

ACKNOWLEDGMENTS

I am grateful to the Ministry of Science and Technology for providing a Ministry of Science and Technology Research Grant for this project (grant number: MOST 105-2410-H-130-030)

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Young and Hot: How Turkish Celebrities Endorsed Turkish Retailer's Jean Lines

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ABSTRACT

Blue Jean is popular clothing item that is embraced by the masses within and outside of the society from which it is believed to originate. The jeans are connected social systems of meaning, value and symbolic rituals that are rooted in specific social, historical, and material context. Denim has the symbolic fortitude as the rebellion, the antiestablishment rhetoric and edginess. The evolution of jeans wearing cannot be understood without appreciating the material context surrounding their rise to fashion prominence, or the rich cultural meanings that they came to embody. Any analysis of jean must consider the industries that sell and market it, including the ways by which it reaches the masses; whether it happens via television programs, movies, YouTube or commercials including celebrity endorsements.

The article aims to examine the use of celebrity endorsement in Jean advertising campaigns in Turkey. Analysing Adil Işık Group and Koton, two most popular retail companies in Turkey at the effect of a celebrity's attractiveness, trustworthiness and expertise on product purchase intentions, and of one examining the relevance of physical attractiveness and other symbolic attributes of the endorser in relation to product meaning.

Keywords: Jean, popular culture, celebrity endorsement

The role of participatory evaluations in changing practice in higher education teaching in New Zealand

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ABSTRACT

The corollary of effective teaching is effective learning, and both represent the lifeblood of an education provider; when too little of either is occurring, quality, vigour and sustainability are compromised. How much do we really know of what is happening in our programmes? Alongside student outcome data, evaluations are one of an organisation's most useful instruments for measuring impact and developing capability. An important part of being an educational practitioner is the desire to provide the best service possible and the openness to periodically examine our practice to see how we can improve. Yet a growing literature attests to the lack of agreement about how to gain this vital information, and what needs to be included.

This paper offers the experience of one institute of technology from New Zealand's vocational training sector, and its efforts to go beyond the usual end-of-programme student evaluations for a more rigorous assessment of its own performance. The model of team-based, inter-disciplinary, participatory evaluation has been refined through four separate projects in 2015-2016, and the critical factors for success offered here draw on derived learnings, culminating in the final iteration which reviewed a contextualised foundation pathway programme for international students.

Keywords: Higher education, Learning, Teaching in New Zealand

A CASE STUDY EXAMINING HOW ADOPTION OF THE REFINED FLIPPED CLASSROOM MAY REDUCE THE ATTAINMENT GAP OF BLACK ASIAN MINORITY ETHNIC (BAME) STUDENTS

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ABSTRACT

Many HE institutional education strategies have traditionally been based on provision targeted at a predominantly white student cohort. However, in an environment where degree programmes are being delivered to increasingly culturally diverse cohorts, it is an assumption that needs to be questioned and addressed by universities if they are to respond effectively to this changing cultural environment. Research highlights that Black Asian Minority Ethnic (BAME) students differ in the ways they learn and communicate from their White counterparts, and that many are less likely to be satisfied with their educational experience or to attain good honours degrees when compared to their White peers.

Based on a case study, the author highlights the significant reduction in the BAME attainment gap that has been achieved through the use of a refined flipped-classroom model across an entire undergraduate degree programme. The refined model allows students to watch lectures at times that suit them and provides them with a database of stored information to refer back to, when it is time to revise for exams or to write coursework. However, there is the additional benefit which encourages students to develop critical reasoning skills in a way which the standard classroom method of delivery does not explicitly provide for, and the traditional flipped classroom has difficulty achieving.

When comparing the performance of students during the period 2012/13 through to 2014/15, the following pattern may be noted in Table 1 with regards to the percentage of students graduating with a good honours degree:

Table 1
comparing the performance of students

Ethnicity	2012/13	2013/14	2014/15
White	79	79	75
Asian	67	73	75
Black	55	58	69
Chinese	50	100	100

The success of the refined flipped classroom is clearly highlighted above with a marked and sustained reduction in the attainment gap of BAME students, against their White peers, has taken place.

Keywords: BAME attainment gap, Critical reasoning, Cultural diversity, Refined flipped classroom

WOMEN ENTREPRENEURS IN INDIA: ISSUES AND POLICIES

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ABSTRACT

“Women who innovate initiate or adopt business actively are called women entrepreneurs.” J. Schumpeter. According to a new National Federation of Independent Business (NFIB) study published in a recent Forbes article, over half of all new small business jobs created in the next five years will come from businesses started by women. Self-employment is regarded as a cure to generate income. The Planning commission as well as the Indian government recognizes the need for women to be part of the mainstream of economic development. Women entrepreneurship is seen as an effective strategy to solve the problems of rural and urban poverty. Entrepreneurship development for women is an important factor in economic development of India. It is estimated that women entrepreneurs presently comprise about 10% of the total number of entrepreneurs in India, with the percentage growing every year. This conceptual paper give emphasis on the problems, issues, challenges faced by women entrepreneurs especially in India and the remedies to overcome them in the light of Indian government policies for women entrepreneurs. The primary objective of this paper is to find out the status of women entrepreneurs in India.

Keywords- Entrepreneurs, self-employment, policies, challenges, Planning commission, strategy.

Chitosan-Fungicide Nanoparticles as Nanodelivery Systems for Controlling Ganoderma Disease in Oil Palm

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A golden crop and economically important tree of Malaysia, oil palm has now faces the threat of a devastating disease which particularly caused by a pathogenic fungus, *Ganoderma*. The fungi that rot the basal stem will eventually kill the oil palm trees, leads to the economic loss up to USD 500 million a year.

One of the key technologies to solve these problems is nanotechnology. Nanotechnology in agriculture has subjected to intense research in the last decade which could be attributed to the useful nature of the nanomaterials compared to their counterparts. The development of new-generation nanopesticides and safe nanocarriers is one of the focus areas in agriculture nanotechnology.

Here, we describe our work on the development of fungicide nanodelivery systems using chitosan nanoparticles and two fungicides; hexaconazole and dazomet. We hoped that the findings from this study will help to sustain the economic benefits of the palm oil industry by controlling the fungal rot, *Ganoderma* through the fungicide nanodelivery system (FUNADS). The system is also expected to be able prolonging the productive life of the infected palm oil tree. With the controlled release property, the fungi delivery system would overcome the shortage of workers in palm oil industry by reducing the frequency of applying time in the infected tree since the FUNADSs are expected to prolong the release of fungicides. In addition, chemical treatment by fungicides is known for their toxicity, harmful and leaching to the environment.

Thus in this study, we aim at reducing the toxicity of fungicides by enclosed it in a biodegradable and toxic-free materials, chitosan. Encapsulation of fungicides for the formation of FUNADS in chitosan matrix nanoparticles will be done using hexaconazole (CS/H), dazomet (CS/D) and a combination of hexaconazole and dazomet (CS/HD).

The chemical structure of the synthesized nanodelivery systems was evaluated using x-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR) and thermogravimetric analysis (TGA). High resolution transmission electron microscopy (HRTEM) shows a sphere shape of chitosan nanoparticles with mean diameter of 43, 50 and 55 nm for CS/H, CS/D and CS/HD, respectively. *In vitro* fungicide release at pH 5.5 shows the fungicide nanoparticles have sustained release properties with prolong release time up to 90 hr. Furthermore, *in vitro* anti-fungal studies of synthesized nanocomposite against *Ganoderma Boninense* shows better inhibition and lower EC₅₀ compared to the counterpart, the bare fungicide.

Keywords: Nanofungicides, Chitosan, Dazomet, hexaconazole, *G. Boninense*, nanodelivery.

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Acknowledgement:

The authors would like to thank Universiti Putra Malaysia and the Ministry of Higher Education of Malaysia (UPM-MOHE) for funding the project under NANOMITE grant, vote no. 5526300

Traumatic Performance of Manhood: Recep İvedik 4, Düğün Dernek (Nuptials and Merriments), Fetih 1453 (Conquest 1453)

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ABSTRACT

Media reproduces the shackles, or alternatively attempts to distract us from the pain of our shackled feet for at least a while. Indeed, it is quite obvious that the reproduction process of these shackles refers to the construction process of a patriarchal mentality. With this study, it is intended to analyze three of the most watched movies in Turkish cinema — namely Recep İvedik 4, Düğün Dernek (Nuptials and Merriments) and Fetih 1453 (Conquest 1453), in terms of social psychology and describe the traumas within these movies by following the steps of Zizek's oxymoron and Virilio's dromology. Referred to online forums in order to discover opinions of the viewers regarding manhood in the movies. While doing this, considered the impact of globalization (that emerged with the collapse of USSR and 9/11 attacks) upon the realistic aesthetics of cinema and therefore moved with the paradigm shift as "from representation to performance". To be a male in a country where nationalistic action melodramas amuse people is discussed.

Keywords: Oxymoron, dromology, realistic esthetics of cinema, performance, manhood

TEACHERS' DECLARED INTENTIONS TO INCORPORATE SLA THEORY INTO TEACHING PRACTICE

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ABSTRACT

The purpose of this study was to understand what teachers intend to do in terms of utilizing SLA theories in their classrooms. The specific research questions were:

(1) To what extent do teachers indicate changes in their Second Language Acquisition (SLA) theories resulting from course participation? and;

(2) What SLA theories presented in an SLA theory course do teachers indicate they are willing to apply in their classrooms?

A total of 75 participants took part in the study. All of these students participated in a second language acquisition theory course over four semesters. In addition to the weekly evaluation of their assignments based on reading the assigned original research articles, students were asked to articulate their own informal theory of second language acquisition once at the beginning and once at the end of the semester. To answer the first question about the extent of the change, a rubric was developed and applied to the theories. First, the researcher looked at the initial theory articulated by the participants in Lesson One. Then the researcher looked at the teachers' final theories at the end of the semester, compared them according to the rubric, and gave them a score. To answer the second research question, content analysis was used. Cluster criticism techniques were used as explained by Foss (2004). In cluster criticism, a researcher identifies key terms and then connects the key terms to associated elements from the text. The key terms and associated elements together form clusters. These clusters are then compared against each other to reveal the argument in the texts, with particular attention to clusters that are either mutually supporting or in conflict with one another. The results revealed that preservice teachers and practicing teachers were both quite likely to change their initial personal theories as a result of course participation. Clearly, the numbers overwhelmingly supported this point of emphasis as 67% of preservice teachers and 68% of practicing teachers changed their informal personal theories completely or somewhat as a result of what they learned in the course. However, there was a fairly noticeable difference between the domestic and international students regarding changes in their initial and final personal theories. A total of 81% of the international students changed their personal theories completely or somewhat, whereas only 61% of domestic students demonstrated similar changes in these categories. Possible reasons for the observed outcomes and future recommendations for research are discussed at the conclusion of the study.

MAINTAINING THE OCCUPATION ON THE EMBROIDERY OF PANTOMIME AND THAI DANCE-DRAMA COSTUMES OF THE ELDERLY IN KHIAN NIWAT COMMUNITY, TROK KAI CHAE, PHRANAKORN DISTRICT, BANGKOK

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ABSTRACT

The objectives of this research are 1) to study the conditions of the occupation on the embroidery of pantomime and Thai dance-drama costumes of the elderly in Khian Niwat community, Trok Kai Chae, Phranakorn district, Bangkok, and 2) to study the factors affecting life-sustaining occupation of embroidery that lasts for more than 50 years. This research is a qualitative research. The in-depth interview was conducted on the two informants, participative observation undertaken for more than 2 years, focus group and interview were done with stakeholders and related people with the total number of 10 individuals. The study found that leaders with high skills and well-popular figures are important persons who acquired the jobs and distributed them piece by piece among the group members. The process started from the customers who appreciated the high quality products and the sacred location where there has been a belief on supernatural power. The fact is that, 200 years ago, this exact area was used as a platform for the most famous Thai classical dance-drama performance. There was a belief that this supernatural power would enable and bless embroiderers of pantomime or khon (in Thai) and Thai dance-drama costumes with success in the past following 10 years. When Pipit Banglamphu Museum was established together with the revival of fine arts and indigenous wisdom to create the cultural tourist attraction, these elderly folks became the sage or knower on the delicate embroidery. These people were hired on the continuous basis. The embroidery work never changed the pattern and it did not need to compete with times. The work itself was considered as a life of leisure. These embroiderers were totally happy and they worked at home.

Keywords--Maintaining the occupation, embroidery of pantomime and Thai dance-drama costumes, the elderly

INTRODUCTION

Pantomime and Thai classical dance-drama costumes embroidery is considered as one of the fine arts that appears in the performing arts exhibition and is related with the Thai history dated back for more than 800 years. Theatrical art is a popular customary activity as well as a Thai identity starting from players with very specific significant roles, say, actor, actress, giant, monkey in the pantomime or khon, and actor and actress in dance-drama. The characters of these performers are reflected in their costumes, manners, dance patterns in which the audiences can recognize and are familiar with when the performance is on stage. When Thailand is ruled by the absolute monarchy, the officers who are members of the nobility traditionally own a group of Thai classical dance-drama performers. These groups of players are supported by the noblemen in government service and are assigned to perform dramatic arts in various auspicious events. When Thailand became democratic country 85 years ago, these performers were forced to leave the patronage system, or in other word, they lack of the supporters, and consequently they have to start to earn a living by themselves. For this reason,

using skills to live their life becomes important factor in order to survive. When the Fine Arts Department was established, the governmental unit is responsible for the management of theatrical arts and Thai musical performance. The fine arts embroidery on pantomime and dance-drama costumes is under the supervision of the said department.

Thailand is now in the transitional period towards an aged society. According to the United Nations World Population, in the year 2552, age dependency that means children and senior people was in the greater number than the working age. It is very interesting that in the year 2560, it will be for the first time in the history of Thailand that the number of children population will be less than the number of aging population. This phenomenon is caused by the decreasing in fertility rate and the death rate of the overall population. As a result, the number as well as the ratio of senior people in Thailand is dramatically increasing. Miss Somkid Laothong or being known as "Mae Peak," aged 76 years old, who has been working on the embroidery for the past 50 years. She has started her career since she was only 16 years old and has lived in Khian Niwat community, Trok Kai Chae until present. She started the embroidery business for pantomime and dance-drama costumes with another 4 neighbors. These business owners are in their seventies and they are still active in the embroidery business. At present, Mae Peak is respected as a local wise person in the community for embroidery of pantomime and dance-drama costumes in Banglamphu area, Phranakorn district, Bangkok. According to Komatra Chuengsatiansup [1] and Chavarit Suntranon [2], community always has something to tell. The past experience and memory including various incidents whether they were the establishment of the community, living conditions in the past, economic, social, political, cultural, and historical development, the plaque, accident, or even the supernatural events could create the local identity, foster way of thought and attitude, and designate the kind of social relationship among people and things in the community both at present and in the future. He also argued that life story of people in the community reflects the thought and translates local culture into tangible things. Life story experience, in Komatra's words, therefore tells us more than a story of a person but echoes about community, society, well-being and whereabouts of each period of time.

For the period of 50 years, 4 senile individuals working on the embroidery of khon and dance-drama costumes and the fact that these people never changed their mind to work on other occupation became the major interest of study that 1) why these 4 senile people decide to work on the embroidery of khon and dance-drama costumes for the past following 50 years? and why this type of work does not become popular among other groups of people?, 2) what are the internal and external factors that affect these 4 senile people to choose the embroidery occupation?, and 3) how the organization or educational institution could develop the body of knowledge based on Thai local wisdom and make it as a profession for the next generation?

All of the above perspectives have created a topic of study in which the researcher would like to learn more on the "Maintaining the Occupation on the Embroidery of Pantomime and Thai Dance-Drama Costumes of the Elderly in Khian Niwat Community, Trok Kai Chae, Phranakorn District, Bangkok"

OBJECTIVES

1. To study the conditions of the occupation on the embroidery of pantomime and Thai classical dance-drama costumes
2. To study the factors affecting the elderly to live their life on the embroidery of pantomime and dance-drama costumes for more than 50 years

CONCEPTUAL FRAMEWORK AND RELATED THEORIES

1. Anthropologic perspective: Donald Light and Suzanne Keller [3] who are interested in social and cultural changes with the supporting plans. This theoretical concept is related with the structural and duty theory proposed by A.R. Radcliffe-Brown who sees human society exist in order to live together and, at the same time, to discover appropriate way or improvement to live life in the society.

2. Franz Boas' historical theory [4]: Franz Boas believes in the principle that culture is the key to define human and environment in which they have a relationship with occupation.

3. The conceptual framework on social conditions that affect system as a spiritual attachment. Rituals and rites are symbols that represent the relationship between human and supernatural power. Victor Turner [5] and Clifford Geertz [6] argued that symbols, rituals and rites of passage, shared feeling and emotion can explain reality and become sources of culture.

METHODOLOGY

This study is a qualitative research. Supattra Junnapiya (2551: 150) [7] suggested that qualitative research be used by the researcher who wants to understand the meaning, process or explanation of a behavior or phenomenon. The qualitative research, she continued, is also appropriate tool for conducting research in a small community to collect data that are abstract, for instance, religious belief, attitude and vision. The research utilizes the ground theory method in which the researcher possesses and is well-aware of theoretical sensitivity in order to formulate a concept and theory. This theoretical sensitivity exists in every step of the research activities starting from theoretical sampling, theoretical coding and theoretical generating. The grounded theory has its unique characteristics in a way that it is formulated from data arising from the upper-most true phenomena (Glaser & Strauss, 1967; Glaser, 1978) [8], [9]. The phenomena are comprehended as the loose structures, with flexibility for prediction and they are not restricted [10]. The data were collected through the following sources

1. Historical documents pertaining to the pantomime or khon and Thai classical dance-drama costumes embroidery. These documents belong to the Fine Arts Department that is responsible for the supervision of Thai performing arts. As a verifiable direct data, the document offers information with no bias and portrayed data that chronologically happened in the past [11].

2. In-depth interview with Miss Somkid Loathong and 2 of her assistants. The in-depth interview allows interviewees to free their mind and let go of their thought and opinion without being dominated by the influential people [11], [12].

3. Structured and unstructured interviews with 2 of the assistant embroiderers and another 10 customers.

4. Focus group of 6-people that include 2 customers, 2 students and another 2 interested persons. The focus group can save a lot of time in interviewing and, at the same time, the data obtained can be used to cross-checked at each other [13].

5. Participative observation on the embroidery work during the years 2015-2016. The participative observation method is widely used in collecting qualitative data in which the researcher can observe the behavior, action, manner and/or expression of the individual or group of people in which they can be perceived through the five senses and can be well understood [12].

6. Non-participative observation in various exhibitions on khon and dance-drama costumes embroideries organized by Tourism Authority of Thailand (TAT), participated in New Year merit making celebration organized by the community in which there were Thai classical dances using costumes that are embroidered by the group of elderly in the community.

7. All interviews were re-checked by the interviewees to prevent any possible misunderstanding. The data can be repeatedly analyzed and re-checked in order to maintain the credibility and validity [14].

RESEARCH FINDINGS

1. The conditions of the occupation on the embroidery of pantomime and Thai classical dance-drama costumes. The task requires high skills of the embroiderers who must inevitably practice and self-study in order to be specialized.

1.1 The superintendent: a person with high specialization who used to work at the Fine Arts Department for 40 years. This person did not have an education on the embroidery work. Loving the embroidery, this individual has tried very hard, bit by bit, little by little, and finally become the embroiderer. She is a highly responsible and very punctual person who must make sure that all of the work assigned must be done. She oversees the necessarily preparation before the actual embroidery work could start, for example, the colors of the players, raw materials arrangements, the players, and other related inputs.

1.2 The assistant: These assistants must be able to 1) copy the pattern, 2) stretch the fabric to begin the embroidery, 3) use the right, appropriate and beautiful sequins, 4) clean, iron, fold and store the cloths, 5) try the costumes on the players, the whole embroidery for one player must be done by a single embroiderer. The assistant, during the first year, will start from the most easy to do task of embroidery. After 2-3 years, this assistant could proceed to perform the whole embroidery by herself. Group of embroiderers must perform their work with high concentration. Every piece of work needs a clear eye-sight and an appropriate sitting posture. The embroiderer must be in focus all the time.

1.3 The customer: He or she must allow enough time that fits with the kind of work he or she has expected and the difficulty of the work. Embroidery work must not be done in a harsh. The embroiderers can usually perform their work at home and at the same time they can still perform their required duty as a house-keeper.

2. External factors that support the embroidery of khon and dance-drama costumes.

2.1 Khon revival. From 2005 onwards, pantomime or khon performance is royally patronized by Her Majesty Queen Sirikit who graciously gave her private money to the Fine Arts Department to revive pantomime performance. The Thai classical pantomime performance is considered as the most beautiful fine arts and is related with the Thai identity. By this reason, there are more educational institutions arrange to have a course to train khon performers. As a result, there is an increasing demand for the khon costumes embroideries. The craftsman who works at the National Theater cannot do the required work. The embroidery work was brought to Miss Somkid Laothong who lived nearby the National Theater. And for the past 10 years, groups of people in the community were continuously hired to work on the embroidery.

2.2 The awakening of the Thai fine arts support. The Fine Arts Department together with many other educational institutions including Tourism Authority of Thailand have been promoting and supporting khon and dance-drama performance. These intensive promotions, especially in performances, help to bring more embroidery work to the people in the community.

2.3 Khian Niwat community, that is the residence and working place of the elderly people who perform the embroidery work, is also considered as a special area for cultural tourism in cooperation with Pipit Banglamphu Museum. The museum exhibits the Thai local wisdom for the past 200 years. The embroidery of khon and dance-drama costumes was displayed every year. This exhibition allows the live-show of the embroiderers performing their exquisite work.

3. Internal factors that support the embroidery.

3.1 Since khon and dance-drama costumes embroidery requires a very high quality of craftsmanship and it is in accordance with the Thai custom, therefore, there is no competitor in the market. The embroiderers can bring the work to theirs house and perform the work at home.

3.2 The embroidery is a popular customary work, when the pattern is ready the embroiderers can begin their work right away. The work is completed piece by piece, for instance, breast cloth, Hanuman and other players in the Ramayana saga for the khon performance.

3.3 The customers usually range from academic institutions, interested individuals and television broadcasters. These people are regular customers who put their trust on the highly craftsmanship.

3.4 The location of the community is considered as a historical site in which it is a part of the first erection of Bangkok as a capital of Thailand in 1782. There is a shrine called Prince Chak Jadesada in the area. Every year in January, people in the community organize New Year celebration in which there is a Thai classical dance and khon performance in order to pay respect to Prince Chak Jadesada. All of the players wear costumes embroidered by the elderly people in the community.

3.5 The 4 elderly people are working as assistants to dress up the players of khon and dance-drama. There are approximately 20-50 players in each performance. The senile people travel with the group of players and are paid in lump sum of money.

3.6 The elderly people live their life in a highly delicate work of embroidery. These groups of old and fragile people cannot work in a conventional highly competitive environment. Embroidery task is a life-long type of work that provides an opportunity for the aged society. The embroiderers must take good care of themselves in using their eye-sight and their correct sitting posture.

DISCUSSION

According to the Foundation for Older Persons' Development (FOPDEV), the Thai population in the year 2556 will be 64.6 million people of which there will be 9.6 million senior people. It is also predicted that in the year 2573, there will be 17.6 aging people (26.3%), and in the year 2583, the number will consequently reach 20.5 million people (32.1%). At present, the government and private organizations together with non-governmental agencies (NGO) are trying their best to collaborate in order to protect, promote and support the status, roles and activities that will enhance the quality of life of the elderly. The study on "Maintaining the Occupation on the Embroidery of Pantomime and Thai Dance-Drama Costumes of the Elderly in Khian Niwat Community, Trok Kai Chae, Phranakorn District, Bangkok" discovered that the senior people who have an occupation on the embroidery of khon and dance-drama costumes must perform their work with their love and passion with the high quality and delicate handicraft. They have accumulated their skills and delicacy on the work. They have responsibility and they deliver their work exactly on time. This kind of commitment pleases the customers. The superintendent is the most important person who distributes the work to the group of subordinates. This practice is in accordance with the heritage and Thai local wisdom conservation work. The study is in line with the conceptual framework and theoretical perspectives pertaining to changes in society and culture proposed by Donald Light, Suzanne Keller and A.R. Radcliffe-Brown in which people try to seek way of life, they argued, in order to survive in society and maintain culture in an environment where there is a belief in supernatural power. This metaphysical power is the force that makes people living together peacefully and happily. This phenomenon was cited in Franz Boas' historical theory and ritual activities performed as symbols to bring belief for the purpose of creating social power proposed by Victor Turner and Clifford Geertz. This study is also in congruence with the work of Krongkaew Rangpetch [15] on "The Components of Musical Folk Drama, Pornthep Pornthawee Group" in which the skills were inherited from one generation to another generation. This accumulated skills combine with experience are reflected in the symbols of Wai Kru ceremony (the ceremony to pray to a teacher), paying respect to the elderly, and beautifully singing according to the original one. The study of Jirawat Peerason (2553) [16] on "The Development of Cultural Products on Chinaware of the Community in Sukhothai World Heritage" in which there were 4 communities that were still enjoying local wisdom heritage that connects with the community's culture and to continue with innovation for arts tourism. The research that belongs to Kulthida Mungkornchaiya [17] on "The Study of Ban Bu's Local Wisdom in Producing Stone-set Bowl to Develop Sustainable Community's Economy" found that public relation pattern for export is important to the production and selling. The work of Wirote Tangsakul [18]

on "The Folk Local Wisdom and the Development of Community Economy: A Case Study of Bronze-craft at Pradit Torakarn Community, Chatuchak District, Bangkok" found that local wisdom is an important factor in the production of bronze-craft products and a combined body of knowledge contributing to the success of the bronze-craft products for the past 200 years. The community savings and self-dependable method on investment directly affect the sustainability of the community's production. The study of Chitsupang Aungsawanon [19] on "The Influence of Organizational Development Towards the Pattern of Performing Arts" showed that the pattern of Thai performing arts (B.E. 2495-2549) has a relationship with the attitudes of the organization's leaders together with the policy of an empowerment to those experts who supervise the performance in the organization.

Chayanee Myer [20] conducted her research on "The Participation in Social Activities of the Elderly in the Pathum Thani Province." The quantitative data were obtained from 348 male and female senior people who were 60 years old and more, and found that the senior people prefer to participate in any activity that has something to do with religious ceremony. These elderly are mentally and physically happy and they experience self-worth when they have a chance to perform social activities. Gandhicha Booyao (2555) [21] on his research titled "Enhancing the Self-Esteem of Different Age Group of the Elderly Through Art Activity and Design" revealed that art activities can enhance self-esteem of the elderly. The art work provided senior people with a sense of pride as being a part of society. The sample of the study was 37 elderly who lived in Ban Bang Khae Welfare Development. These older people aged between 60-99 years old. Watchapolprasit Konkaew [22] and his research called "The Health Behavior of Elderly of Klong Tumru Sub-district, Amphoe Mueang Chon Buri" showed that the elderly with different source of income differed in health behavior. Kajana Panyathorn [23] and her research entitled "The Relationship Between Selected Factors and the Life Security of the Elderly in Udon Thani Province" discovered that life security is considered to be an important factor for the well-being of the elderly. The determinants of well-being are based on many factors. However, the situation of the elderly can result in having problems unless the elderly are protected by their families, communities or the wider society. The sampling of 400 elderly people living in Udon Thani province was used in the study. The findings showed that the meaning of life security in the elderly was classified into five main categories: being healthy, having a good family, being economically secured, engaged in social activities, feeling safe in their house and the local community. Wirawan Borirag and Orawan Loyfao [24] conducted their research on "Living with Happiness of the Elderly in the Senior Citizens Club in Tambon Huay Phaya, Amphor Dontum, Nakhon Prathom Province" and found that the approaches leading to happiness of the elderly are going to the temple and making merits, meditation, in-house working, and other things that cause a consciousness of living in the present. Chirawut Lomprakhon and Aegapop Maneenart [25] and their research titled "Lifestyle of the Working Elderly People in Bangkok Metropolitan Areas" was a qualitative research that used an in-depth interview as a tool to collect data. The number of the interviewees was 36 persons of whom 18 were males and another 18 were females. To select these samples, the researchers used purposive sampling and social class concept. The research found that the lifestyle of the working elderly people in Bangkok metropolitan areas could be classified into 11 groups under the theory of AIO (AIO Categories of Lifestyle Studies) which were 1) dharma activist, 2) family oriented, 3) devoted parents, 4) sport lovers, 5) healthy eating consumer, 6) avid traveler, 7) always good-looking, 8) shopaholic, 9) very choosy, 10) political fan, and finally, 11) very conservative. For the dharma activist, the elderly loved to spend their time to make a merit and share it with others and were ready to devote themselves to social and art activities. Last but not least, Sompoch Anaksul and Kotchakorn Sungkachart [26] wrote in their research named "The Way of Life of the Over 100 Years Elderly in Chon Buri Province, Thailand" that the elderly who helped themselves were able to do most routine work by themselves. The elderly who were able to help themselves were much happier than those who were not. The researchers concluded that to live a long life, the elderly should have a healthy attitude towards life.

CONCLUSION

Arts is an essential part and meaningful to human life. It is the result of human's creativity for the sake of utility and aestheticism. Arts and human being are inseparable. The two are related since man was born up until the day he dies. There are many great and interesting things happened in this world everyday especially those involve in the technological innovation. But there are very little things, in very small communities, in many places in the world that still appreciate and being impressed with the work that requires local wisdom that can be handed down from one generation to the next. There are groups of people who are satisfied with simple life, are interested in the learning of self-development and are happy with social relationships among surrounding people, such as lovers, parents, cousin and friends more than falling in love with high technology [27]. Khon and dance-drama costumes embroidery occupation is the task that requires highly skills and self-practice. The work itself consumes a very long and patient period of time since it demands a lot of details. The tatting pattern repeats itself over and over again so it is suitable for the elderly. Although this particular type of work has been promoted and transferred the body of knowledge among various educational institutions as well as among the youngster, the result did not portray in a favourable light. Pantomime and dance-drama costumes embroidery takes a long and tedious time to finish the required task, therefore, it lacks competition in order to bring about innovation to improve the work processes. On top of that, the price is quite stable due to the stable demand. As a result, this embroidery occupation interests no young generation. In conclusion, khon and dance-drama costumes embroidery occupation offers a chance to elderly people to work and to earn a living in fast-moving society where patient is no longer considered as a virtue. The embroidery work causes the elderly a positive thinking towards their lives, the work can be done at home, it utilizes local wisdom and, at the same time, preserves the invaluable Thai arts for the next generation.

SUGGESTION

For khon and dance-drama costumes occupation to be sustainable maintained, the development of body of knowledge of the embroidery should be stored in social media such as a video and should be distributed among various channels by using information system technology. The development should be done in term of a new pattern of this conservative work, for example, the embroidery can be broken down into a small tiny pieces that reflect Thai cultural heritage in which they can be used for interior decoration and/or souvenirs for the tourists. This innovation can surely increase the demand for the pantomime and dance-drama costumes embroidery. Finally, Prawet Wasi [28] , [29] argued that social understanding, social value and social practice are important factors in policy formulation. [30] The research on "Maintaining the Occupation on the Embroidery of Pantomime and Thai Dance-Drama Costumes of the Elderly in Khian Niwat Community, Trok Kai Chae, Phranakorn District, Bangkok" is a study that serves the said statement and, as a result, it can be used by the responsible units to come up with respective policy.

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ENGLISH INFLECTION IN PLURAL NOUNS WITH -F AND /f/ ENDING

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ABSTRACT

The aims of this study were 1) to analyze the occurrences of English inflection in plural nouns with -f and /f/ ending and 2) to find out how many types of variations there were and what these variations were in nouns with -f and /f/ ending. This study was a document research started with a content analysis of English inflection in nouns with -f and /f/ ending including both regular forms and irregular variations. There was a collection of the data from a number of different dictionaries. Variations in nouns with -f and /f/ ending were analyzed and summarized for each unique environment in order to find how many types of variations in English inflection of nouns with -f and /f/ ending, there were and what these variations were. The instrumentation includes the inflectional checklists on English inflectional plural nouns with -f and /f/ ending. The results showed that nouns with -f and /f/ ending have three types: they are formed by adding 1) -s, 2) adding -es, or 3) adding both -s and -es. For /f/+s, it occurs with the nouns ending with -f, -fe, -ff, -ffe, -gh, -ph while -f > v + es occurs only in nouns with -f or -fe ending. In addition, -f + -s or -f > v + -es occurs with only -f ending.

Keywords--English Inflection, Plural Nouns with -f and /f/ ending

INTRODUCTION

For proficiency in English, this shows that students possess particularly poor reading and writing skills, and a weak command of grammatical structures. (Yunibandhu, 2004) In addition, the most serious problem for Thai students in English language learning is writing skills, while the barrier to intercultural communication and being ashamed of pronunciation when communicating with an English native speaker are the least serious problems (Pawapatcharadom, 2007).

The grammar of the Thai language is also very different to that of English because Thai is an uninflected language. Thus, nouns and verbs do not change their forms for number, gender, case or person. Instead, separate words are used in combination. The use of inflections is therefore somewhat confusing for Thai learners of English. Also, within the subject-verb-object structure the subject and object are often left out in Thai. Often students apply this to English so sentences are rendered objectless or subjectless. There are no articles in Thai noun phrases so adjectives occur after a modified noun. Furthermore, many adjectives in Thai behave like verbs which can lead the student to omit the verb "to be" in English (e.g. that food good). (George, 1998). Thai students are not normally exposed to these variations, even when they study English outside of their regular school programs. Variations in inflection are not focused on during instruction and practice of its use then is minimal (Yordchim, 2012)

English inflection occurring in nouns, verbs and adjectives has eight types, they are 1) noun plural, 2) noun possessive with 2 forms of 's and s', 3) verb present participle, 4) verb present simple, 5) verb past tense, 6) verb past participle, 7) adjective comparative and 8) adjective superlative. Regular and irregular forms occur with noun plural, verb present simple, verb past tense, and verb past participle, adjective comparative and adjective superlative.

This study focused on the occurrences of English inflection in plural nouns with -f and /f/ ending.

OBJECTIVE

The aims of this study were 1) to analyze the occurrences of English inflection in plural nouns with -f and /f/ ending and 2) to find out how many types of variations there were and what these variations were in nouns with -f and /f/ ending.

METHODOLOGY

This study was a document research started with a content analysis of English inflection in nouns with -f and /f/ ending including both regular forms and irregular variations. Then, there was a collection of the data from a number of different dictionaries. Variations in nouns with -f and /f/ ending were analyzed and summarized for each unique environment in order to find how many types of variations in English inflection of nouns with -f and /f/ ending, there were and what these variations were. The instrumentation includes the inflectional checklists on English inflectional plural nouns with -f and /f/ ending. The data were analyzed by recording into the checklists provided according to each variation. There was a collection of the data from a number of different dictionaries such as Oxford Advanced Learner's Dictionary, Merriam-Webster Dictionary, Longman Dictionary of Contemporary English and Collins Cobuild Dictionary.

RESULTS

Nouns with -f and /f/ ending have three types: they are formed by adding 1) -s, 2) adding -es, or 3) adding both -s and -es. For /f/ + -s, it occurs with the nouns ending with -f, -fe, -ff, -ffe, -gh, -ph while -f > v + es occurs only in nouns with -f or -fe ending. In addition, -f + -s or -f > v + es occurs with only -f ending as shown in Table 1.

Table 1
Inflection in nouns with -f and /f/ ending and their opportunities of plural occurrences

No.	-f and /f/- ending environment	Opportunities of Plural Occurrences		
		-f and /f/ + -s	-f and /f/ > /v/ + es	Both -f and /f/ + -s and /f/ > /v/ + es
1	-f	□	□	□
2	-fe	□	□	x
3	-ff	□	x	x
4	-ffe	□	x	x
5	-gh	□	x	x
6	-ph	□	x	x

□ = occurred x = not occurred

Most inflection with -f and /f/ ending occurs in 1) -ff + -s, 2) -f + -s, 3) -f > v + es and 4) -ph + -s respectively. The least are 1) -fe + -s 2) -ffe + -s and 3) -gh + -s as shown in Table 2.

Table 2
List of singular and plural nouns with -f and /f/ ending

No.	-f and /f/ ending occurrences	Numbers	Nouns list	NB
1	-fe +-s	1	1. fife fifes	German <i>Pfeife</i> pipe, fife, from Old High German <i>pfīfa</i> , from Vulgar Latin <i>*pipa</i> pipe – more at PIPE First Known Use: 1539
2	-ffe +-s	2	1. giraffe giraffes 2. gaffe gaffes or gaff	Italian <i>giraffa</i> , from Arabic <i>zirāfa</i> First Known Use: circa 1600 French, gaff, gaffe First Known Use: 1909
3	-gh +-s	2	1. laugh laughs 2. slough sloughs*	*2 pronunciations, 2 definitions: 1. slū, slaŭ; in the U.S. slaŭ 2 sl əf
4	-fe > -v +-es	5	1. fishwife fishwives 2. knife knives 3. life lives 4. midwife midwives 5. wife wives	
5	-f +-s/-es	6	1. dwarf dwarves or dwarfs 2. handkerchief handkerchiefs or handkerchieves 3. hoof hoofs or hooves 4. scarf scarfs or scarves 5. wharf wharves or wharfs 6. wolf wolves or wolfs	
6	-ph +-s	10	1. caliph (also calif) caliphs 2. graph graphs 3. lithograph lithographs 4. monograph monographs 5. nymph nymphs 6. paragraph paragraphs 7. paraph paraphs 8. phonograph phonographs 9. polygraph polygraphs 10. staph staphs	
7	-f > -v +-es	11	1. bookshelf bookshelves 2. calf calves 3. elf elves 4. flyleaf flyleaves 5. half halves	

No.	-f and /f/ ending occurrences	Numbers	Nouns list	NB
			6. headscarf headscarves 7. leaf leaves 8. loaf loaves 9. sheaf sheaves 10. shelf shelves 11. thief thieves	
8	-f +-s	22	1. apéritif apéritifs 2. bas-relief bas-reliefs 3. belief beliefs 4. brief briefs 5. chef chefs 6. chief chiefs 7. fief fiefs 8. massif massifs 9. motif motifs 10. neckerchief neckerchiefs 11. oaf oafs 12. poof poofs 13. proof proofs 14. reef reefs 15. ref refs 16. relief reliefs 17. roof roofs 18. serf serfs 19. spoof spoofs 20. sunroof sunroofs 21. waif waifs 22. waterproof waterproofs	
9	-ff +-s	25	1. bailiff bailiffs 2. bluff bluffs 3. cliff cliffs 4. cuff cuffs 5. dandruff dandruffs 6. flagstaff flagstaffs 7. foodstuff foodstuffs 8. gaff gaffs 9. gulf gulfs 10. mastiff mastiffs 11. midriff midriffs 12. plaintiff plaintiffs 13. pontiff pontiffs 14. puff puffs	

No.	-f and /f/ ending occurrences	Numbers	Nouns list	NB
			15. quiff quiffs 16. riff riffs 17. ruff ruffs 18. sheriff sheriffs 19. skiff skiffs 20. spliff spliffs 21. takeoff takeoffs 22. tariff tariffs 23. toff toffs 24. whiff whiffs 25. --- earmuffs (only plural)	

CONCLUSION

The main findings showed that inflectional variation in the English language is significant, especially for plural noun inflection with -f or /f/ ending. They are formed by adding 1) -s, 2) adding -es, or 3) adding both -s and -es. The -f or /f/ ending environments were nine occurrences: 1) -fe + -s, 2) -ffe + -s, 3) -gh + -s, 4) -fe > -v + -es, 5) -f + -s/-es, 6) -ph+ -s, 7) -f > -v+ -es, 8) -f + -s, 9) -ff + -s. It is believed that this research study delivers useful data, which will give a broader yet comprehensive concept and overview of inflectional variation in the English language.

ACKNOWLEDGEMENTS

This paper would not have been possible without the contribution, the supporting, the kindness help and the encouragement of Associate Professor Dr.Luedech Girdwichai, The Chancellor of Suan Sunandha Rajabhat University, Assistant Professor Dr.Witthaya Mekhum, The Vice President and Assistant Professor Dr.Prateep Wajeetongratana, the Dean of Faculty of Management Sciences Suan Sunandha Rajabhat University.

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THE APPLICATION OF KARANDA FRUITS (*CARISSA CARANDAS* LINN.) FOR AN ICE CREAM MAKING

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ABSTRACT

The aim of this research study was to develop recipe of Karanda ice cream as healthy promoting ice cream by high protein, low fat and naturally raw material, which found in local area. The results were found that appropriate condition for Karanda ice cream including incubation period, temperature and frozen time, which were 8-12 hours, -20 to -25 °C and 2-4 hours, by using ice and salt to make an ice cream in ice cream making machine and 20 min. for automatic – ice cream making machine, respectively. Small fruit variety Karanda should selected only ripe fruits for Karanda ice cream made. Because of unripe fruits were contained resin and need to be air dried for reducing level of resin. Therefore, large fruit variety Karanda can be use both ripe and unripe fruits for Karanda ice cream made by without any astringent and bitter taste. However, small fruit variety Karanda was proper to made ice cream for trade, because occurring of industry to select the ripe fruits and commercially frozen, which be providing for the whole year compared with large variety fruits were rarely, low harvesting amount and short shelf life. Karanda ice cream produced from flesh part was attractive but was not accepted by consumers. It may due to resin contained with Karanda pulp, which led to be rough texture of ice cream. We were choose only Karanda juice, which was more appropriated and used Karanda juice with water by 1:1 ratio, because undiluted juice was sour taste. Most acceptance recipe of karanda ice cream product was seventh recipe by 95% from fermented Karanda of consumers, which was contained soy protein to made ice cream was delicate and swell, milk powder (little amount) to made ice cream was greasy, corn powder as stabilizer and undiluted coconut milk (little amount) to improve ice cream odor and similar to apricot odor and Red like beetroot color and color of ice cream is dark red.

Keywords– Karonda Fruits, ice cream

INTRODUCTION

THE “Karonda Friut” as in Fig. 1 or (*Carissa carandas* Linn.) is called “*namdaeng*” in Thai. It's a local fruit that usually found and grow up in Samutsongkhram province, the central part of Thailand. Karonda fruit is one of the many berry-like fruits and It is a hardy, drought-tolerant plant that thrives well in a wide range of soils and It flourishes well in regions with high temperatures. The plant is grown from seed sown in August and September. Mature fruit is harvested for pickles and it contains a fair amount of Vitamin C and pectin, sometimes used in treatment of anaemia. In food, it usually used for jam and jelly.

Rajamangala University of Technology Tawan-Ok created a project to study of using the potential inKaronda Friuts the results found that the Karonda Friu twasn't toxic for cells and it is safely use in food and it can be an ingredient in food products. In addition, it contains amount of vitamin C to be used for a components and chemical properties for antioxidant agent and it can be an anti-cancer. [1] Moreover, the Karonda Friut was used to study and produced to products e.g. study of the using for matured and immatured Karonda Friut for candy production and found that the pH value of Karonda Friut around 2.56 is suitable for candy production by squeezing and sugar, citric acid and glucose syrup adding. The study found that the candies obtained the good result of sensory evaluation and the another product is wine that made from Karonda Friut.

Karonda Friut was used to be a herb and healing for local Indian for long time ago [2] and have some case studies support that the KarondaFriut can heal and decrease the sugar level in blood for diabetes disease. In addition, the Karonda Friut can be used for food requirement in human that related to the study of Antidiabetic potential of unripe *Carissa carandas* Linn. Fruit extract.[3] the results found that the Karonda Friut can be healed the skin allergy and leaf of the Karonda Friut can be healed the sickness [4].

In Thailand, HRH Sirindhorn created a project in Samutsongkhram province for cashing up and local product development for their community. For this study is to make an ice cream from Karanda Friut is not only a studying for product developments to community but also the development for recipe of Karanda ice cream as healthy promoting ice cream by high protein, low fat and made from natural raw material, which found in local area as the aim of this study.



Fig. 1 The Karanda Friuts that used in this research

MATERIALS AND METHODS

This study is a basic research to study for an ice cream making, the suitable amount of pulp in ice cream and duration time for ice cream mixing to be the suitable texture of ice cream for ice cream recipe development

A. Research area specification

Bangkoktee floating market in Samutsongkhram province was selected and data collected area from the tourists for this study. The research was studied at Home economics building, Faculty of Science and Technology, Suan Sunandha Rajabhat University

B. Groups of sample

Groups of sample in this study are the tourist at Bangkoktee floating market in Samutsongkhram province. It's a purposive sampling for 300 tourists

C. Karanda Friut field research

Researcher collected the Karanda Friuts about 400 gram. from Samutsongkhram province area and make the experiment within 2 weeks.

D. Basic Experiment

Karanda Fruits for the experiment are divided into 2 groups. It's a group of immature group and mature group. The colors of Karanda Fruits are ripen Karanda red to purple color and only fermented fruit and ripen Karanda red to purple color were frozen at -18°C for a week after that fermented it in refrigerator at 8°C for a week before using for ice cream making and the most acceptance recipe appears below

Karanda Fruits	200 g.
Water	200 g.
Sugar	200 g.
Salt	½ teaspoon
Thick coconut milk	60 ml.
Soy milk	200 ml.
Corn flour	25 g.
Powdered milk	15 g.
Water for flour and milk dissolve	125 ml.

Directions

1. Remove seeds of Karanda Fruits and blend the pulp with water and then squeeze the liquid out of the Karanda Fruits residue
2. Add sugar, salt, thick coconut milk and soy milk into the liquid from the previous step
3. Then dissolve corn flour and powdered milk in the water, after that add it into the acquired liquid of Karanda Fruits
4. Heat it until the liquid is thick, and then remove the heat suddenly with ice about 1 hr. and refrigerate for overnight
5. Blend all mixing in the ice cream mixer with salt and ice about 1 hr. until it appears a suitable texture of ice cream but 20 min mixing for automatic ice-cream making machine.

RESULTS AND DISCUSSION

The types of Karanda Fruits in this research area are small type Karanda Fruits, it has white to light pink color when it is immature and become a purple to black when it is mature. The taste of Karanda Fruits in this type is sour, astringent and the sourness and astringent taste is decrease when it is more mature. For another type is bigger type Karanda Fruits, it has green color and become red purple to black when it gets more mature. This type of type Karanda Fruits has no astringent taste, more easy to eat and to be rotten than small type one.

The tastes of Karanda Fruits Juice depend on type and maturing of their fruits, the small type Karanda Fruits juice obtained light pink color and when its blended to be an ice cream it has light yellow and light pink ice cream color. On the other hand the big type Karanda Fruits juice obtained red strawberry color of ice cream.

The ratio for amount of Karanda Fruits and water is 1:1 and Karanda ice cream obtained suitable taste, color and the most acceptance point for consumer

The ice cream blending duration time from the experiment found that, duration time of ice cream blending affects to the texture of an ice cream showed below

- 30 min. blending: it still appears liquid texture.
- 45min. blending: ice crystals appear in the wall of ice cream mixer tank.
- 55 min. blending: ice cream to be thick texture.

From the experiment it can conclude that the type of Karanda Fruits that obtain a good taste and texture of ice cream is a ripen fermented Karanda fruits color of an ice cream is like beetroot color as showed in Fig.

2



Fig. 2 Ice cream from fermented Karanda Fruits.

Karanda Fruits ice cream acceptance, this recipe gave the best results of acceptance for consumers with questionnaires as texture, preferring and taste acceptance are 91% of total point.

From the experiment, Karanda Fruits ice cream from the small type Karanda Fruits obtained an astringent taste but, Karanda Fruits ice cream from the big type Karanda Fruits obtained a good taste and more consumer acceptance. In the future, Karanda Fruits ice cream should make from the frozen fruit because the plant is grown only in August and September.

The ratio of Karonda Fruits juice and water is 1:1, it made the taste of an ice cream to be not so much sour but if the duration time of ice cream blending is more 55 min, it can make an ice cream to be melted because the temperature out of an ice cream blending tank increases and incubation time of an ice cream is about 8-12 hrs. at -20 to -25 degree Celsius for 2-4 hrs. freezing time. But if blend it with automatic ice - cream making machine will not have problems because it spent very short of mixing time for 20 min and it had stable low temperature. This recipe gave the best results of consumer acceptance with the questionnaires as texture, preferring and taste acceptance factors are 91% of total point. An ice cream made from Karonda Fruits contained the protein content from soy milk and made it appeared a good texture, powdered milk gave a good taste and corn flour adding to be an emulsifier and the last one, thick coconut milk added for taste and smell adjustment of an ice cream. Finally, an ice cream from Karonda Fruits obtained a taste and smell like an apricot. And using fermented Karonda fruit will adjust the taste to be smooth and strong and made the color of ice cream to be dark red color like beetroot.



Fig. 3 A Karonda Fruits ice cream training course for housewives group and farm women



Fig.4 Finished products of Karanda Fruits ice cream to be a product for community (OTOP)

CONCLUSION

From this experiment, the Karanda Fruits can be made to a healthy ice cream and it contained protein content, fat content, no chemicals and preservative added ice cream and moreover it naturally made from local fruit.

SUGGESTIONS

1. The aim of this experiment is to be support and help atourism at Bankonotee floating market in Samutsongkhram province area so researcher gave a Karanda Fruits ice cream training course for housewives group and farm women group to be a career and to be one of community product (OTOP) showed in the Fig.4 and it can be attracted the tourists into Bangkoktee floating market after research.

2. This research did not concentrate on the Karanda Fruits residue from an ice cream making yet. Their residue can be used and developed to other products in the future.

3. KarandaFruits growing season is about 4 months between May to August, so researcher is looking for the storage of Kaaonda Fruits to be used as products all the year.

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THE QUALITY OF LIFE OF REHABILITATED PATIENTS WITH DRUG-TAKING FROM REHABILITATION CENTER IN TEMPLES

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ABSTRACT

The purpose of this research was to study the quality of life of patients with drug-taking who rehabilitated at the rehabilitation center in temples. This study was a survey research focused to three temples in which were Ta Kai Pluang Temple in Burirum, Saphan Temple in Bangkok, and Khao Phra Nunnery Center in Suphanburi. The target group of this research was 83 patients with drug-taking. Data analysis was tested by Statistical Package for the Social Science for Window (SPSS). The quality of life was measured by discriminating four domains of physical, psychological, social relationships, and environment domains. The results showed that averages of the quality of life before and after rehabilitations were significantly different. A score of all dimensions before rehabilitation was 86.90 while after rehabilitation was empirically 92.16. T - test result was 4.86 at the significance level of 0.05. The average overall quality of life of patients with drug-taking between before and after rehabilitations was 6.56 and 7.66 respectively. T - test was 6.66. First, the averages quality of life of physical domain before and after rehabilitations were 22.82 and 23.70 respectively, t - test was 2.59 significantly different at the significance level of 0.05. Second, psychological domain, the average quality of life before and after rehabilitations were 21.44 and 22.58 respectively, t - test was 2.99 significantly different at the significance level of 0.05. Third, social relationships, the average quality of life before and after rehabilitations were 10.25 and 10.32 respectively, t - test was 0.27 significantly different at the significance level of 0.05. Finally, environment, the average quality of life before and after rehabilitations were 25.84 and 27.92 respectively, t - test was 4.27 significantly different at the significance level of 0.05.

Keyword–quality of life, rehabilitation of drug addicts, rehabilitation centers

INTRODUCTION

In the present world, we have accepted that drug trafficking becomes the vital transnational crime. According to World Drug Report 2012 of United Nation Office on Drug and Crime (UNODC), about 230 million people, or 5 percent of the world's adult population, are calculated to use a habit-forming drug (illicit drug) in 2010. About 27 million people are numbers of drug users, which is 0.6 percent of world's adult population. A problem of the use of the illicit drug has been increasing in the several developing countries. Heroin, cocaine and other drugs kill more 0.2 million people in each year. [1] Illicit drug problem becomes parts of public health issue, which it is a must to urgent implement. Public health and quality of life must prior develop in order to maintain and promote better health efficiency in our country. [2]

With regard to the 11th National Economics and Social Development Plan B.E 2555 - 2559 (2012 - 2016) in the Government Gazette, Thailand has been influenced by the new world changing in many dimensions such as political, economic, social dimensions. For instance, optimistically, Thailand has to evolve itself for stepping toward the ASEAN Community by 2015 which effects to domestic development. It needs to strengthen and build up the faithfulness in this region. On the other hands, Thailand has to confront with many moral and ethical decreases, and other vulnerable threats such as drug trafficking, drug smuggling, and increasing illicit gambling. [3]

In this regard, the use of an illicit drug or habit-forming drug use also known as “drug addiction” are to getting accustomed to a particular habit which itself is a complex disease, and difficult to quit it individually. Drug addiction leads the imbalance of function of the brain, which it can directly see that there is lower efficiency in the brain. Patients with drug-taking are unable to make a decision by themselves, lose their personal control, their awareness and cognitive domains are lower. The brain consists of three main parts namely Cerebral Cortex, Midbrain, and Brain Stem. These work in different ways of function. Drug addiction will destroy the functions of Cerebral Cortex and Brain Stem. [4]

Thus, it is obviously that drug addiction would rather consist of negative than positive impacts. Drug addiction comes from whenever people try to use an illicit drug even in a small dose. In the first stage, they felt that happiness was all around, so they would need a higher dose which more and more was not enough. This leads to Neurotransmitter or changing of chemical substance level in the human brain in which incentives the build of different conditions in the brain. The behavior of habit-forming drug users is a request for a higher dose of drugs which directly effect to the physical problem. Distinctly, patients with drug-taking are not able to take care themselves; they need the special assistance from medical officers and relatives, as well as more times for rehabilitation.

According to rehabilitation center, temple is promoted to be a rehabilitation center for treating the patients with drug-taking where was established by three parties of Department of Religious Affairs, Department of Medical Services, and Office of the Narcotics Control Board. Each party plays a role due to their mission “the collaboration for aid and restoration for patients with drug-taking by promoting a temple as a rehabilitation center”. Princess Mother National Institute on Drug Abuse Treatment (PMNIDAT), Department of Medical Services, Ministry of Public Health is an office to work for a training course of treatment and rehabilitation for patients with drug-taking, seeking the expert to lecture and train monks in the rehabilitation center in order to understand how to primary screen the patients with drug-taking, to treat the patients, to evaluate the patients both physical and mental illness that is affected by drug-taking, to submit the patients to other rehabilitating networks as well as to follow the patients at least a year. [5] The author takes in charge of following and evaluating works, thus this is significantly to study the quality of life of patients with drug-taking before stepping into the rehabilitation center comparing with after rehabilitation center.

OBJECTIVES

To assess the quality of life of patients with drug-taking between before rehabilitation and after rehabilitation at the rehabilitation center in temples.

SCOPE OF RESEARCH

1. Location

This research focused on patients with drug-taking at the rehabilitation center where has registered to be clinic according to Drug Act B.E. 2522 (1979), there are now 19 clinics in total. The selection criteria are (1) Active clinic where have been now treating the patients with drug-taking (2) Clinic where treats patients without herbal dosage taking (3) Clinic where the treating period during rehabilitation has been around 1 – 2 months. There have been only three centers as following (1) Ta Kai Pluang Temple in Burirum (2) Saphan Temple in Bangkok and (3) Khao Phra Nunnery Center in Suphanburi.

2. Population

Population in this research were patients with drug-taking or drug addicts who attended to the rehabilitation center in three temples (1) 25 patients rehabilitated in Ta Kai Pluang Temple (2) 30 patients rehabilitated in Saphan Temple and (3) 28 patients rehabilitated in Khao Phra Nunnery Center. Total populations were 83 patients.

LITERATURE REVIEW

Habit-forming drug or narcotics is defined as chemical substances or objects or any herbs which are taken to human body by any path method; taking, smoking, inhaling, injecting or either which effects to physical and psychological manners, for instances of a severe need of higher dose of drug, a suffering from narcotic overdose, and poorer health. This is not concluded to household remedies. [6]

The negative impacts occurred by drug addiction are summarized to four aspects 1) physical and psychological impacts: drug addiction causes to a stress and anxiety which lead to Psychosis, health problem and other complication diseases, 2) social impact: habit-forming drug users are abhorred and not respected by other people in their society, 3) economic impact: it wastes times and budgets in order to restore the economic stability, and 4) government impact: government need to suppress and special monitor on this issue that effects to the overall political administration.

According to the rehabilitation for patients with drug-taking, this could be done in four dimensions 1) physical rehabilitation using any diagnosis or therapeutic approach in order to restore to health, 2) psychological rehabilitation is the most important process which is to maintain the patients' mental health by decreasing the poor perception and rebuild their awareness to care themselves, 3) rehabilitation in occupation is a method to help the patients come back to work, and 4) rehabilitation in social relationship such as a support on education or knowledge sharing for rehabilitated patients with drug-taking. [7]

In accordance with the quality of life, it consists of four domains as following 1) physical domain, physical domain is a physical perception of oneself such as a good healthy without no pain, an independent people, awareness of oneself ability, 2) psychological domain, it is the mental awareness such as a positive perception of oneself: a proud, a personal perception of the depressive implementation, and a trust, 3) social relationships domain, it is the relationship among oneself and other people, a perception and acceptance on other people's assistance, and 4) environment domain. [8]

METHODOLOGY

This research was a quantitative assessment using a survey questionnaire. Data collection was proved by Thai abbreviated version of World Health Organization Quality of Life (WHOQOL - BREF - THAI) which assessed the reliability of Cronbach's Alpha Coefficient at 0.84, and the validity was at 0.65. This instrument was surveyed in 83 patients with drug-taking at the rehabilitation center in three temples namely Ta Kai Pluang Temple in Burirum, Saphan Temple in Bangkok, and Khao Phra Nunnery Center in Suphanburi, then compared these data with the approved Thai version of WHOQOL - 100.

STATISTICAL ANALYSIS

Data analysis was calculated by Statistical Package, to assess frequencies, percentages, means, standard deviations, and an analysis of two populations means by using a statistical examination (t-test).

RESULTS

Results of the assessment of the quality of life of patients with drug-taking who attended to the rehabilitation center in three temples were investigated by scores of quality of life, by discriminating four domains of quality of life and the overall quality of life, which were described in the tables.

Table 1
Mean, Standard Deviation, t-test of patients with drug-taking before and after rehabilitation

Domain	Before		After		t-test	p-value
	\bar{X}	S.D	\bar{X}	S.D		
Physical	22.82	3.04	23.70	2.56	2.59	.012*
Psychological	21.44	3.19	22.58	2.78	2.99	.004*
Social relationships	10.25	1.92	10.32	1.85	0.27	.786
Environment	25.84	4.08	27.92	4.57	4.27	.000*
Total	86.90	10.24	92.16	9.80	4.68	.000*

Note: *p < .05

Table 1 demonstrated the results of data analysis such as means, standard deviations, and t-test scores. Results proved that the means of four domains before and after rehabilitations were 86.90 and 92.16 respectively, and t-test score was 4.68. They were significantly different at significance level at 0.05. In additions, the average overall quality of life of patients with drug-taking between before and after rehabilitations was 6.56 and 7.66 respectively. T - test was 6.66 significantly different at significance level at 0.05. For physical domain, means of before and after rehabilitations were 22.82 and 23.70 respectively, and t-test score was 2.59 significantly different at significance level at 0.05. For psychological domain, means of before and after rehabilitations were 21.44 and 22.58 respectively, and t-test score was 2.99 significantly different at significance level at 0.05. For social relationships domain, means of before and after rehabilitations were 10.25 and 10.32 respectively, and t-test score was 0.27 non-significantly different at significance level at 0.05. Also, for environment domain, means of before and after rehabilitations were 25.84 and 4.08 respectively, and t-test score was 4.27 significantly different at significance level at 0.05.

Table 2
Number and percentage of respondents before rehabilitation classified by domains and overall quality of life

Domain (N = 73)	Poor		Moderate		Good		Total	
	No.	%	No.	%	No.	%	No.	%
Physical	2	2.7	66	90.4	5	6.8	73	100
Psychological	1	1.4	47	64.4	25	34.6	73	100
Social relationships	4	5.5	50	68.5	19	26.0	73	100
Environment	4	5.5	55	75.3	14	19.2	73	100
Overall quality of life	1	1.4	56	76.7	16	21.9	73	100

Note: No. is abbreviated for a number of respondents

As shown in Table 2, number and percentage of respondents who were patients with drug-taking before rehabilitation at the rehabilitation center in three temples were classified by physical, psychological, social relationships, environment domains and the overall quality of life. Results proved that for the physical domain, of 73 respondents, 2 of all were poor, 66 of all were moderate, and 5 of all were good, which their percentages were 2.7%, 90.4%, and 6.8% respectively. For psychological domain, of 73 respondents, one was poor, 47 of all were moderate, and 25 of all were good, which their percentages were 1.4%, 64.4%, and 34.6% respectively. For social relationship domain, of 73 respondents, 4 of all were poor, 50 of all were moderate, and 19 of all were good, which their percentages were 5.5%, 68.5%, and 26.0% respectively. For environment domain, of 73 respondents, 4 of all were poor, 55 of all were moderate, and 14 of all were good, which their percentages were 5.5%, 75.3% and, 19.2% respectively. Additionally, the overall quality of life, of 73

respondents, one was poor, 56 of all were moderate, and 16 of all were good, which their percentages were 1.4%, 76.7%, and 21.9% respectively.

Table 3
Number and percentage of respondents after rehabilitation classified by domains and overall quality of life

Domain (N=73)	Poor		Moderate		Good		Total	
	No.	%	No.	%	No.	%	No.	%
Physical	0	0	61	83.6	12	16.4	73	100
Psychological	0	0	34	46.6	39	53.4	73	100
Social relationships	3	4.1	55	75.3	15	20.5	73	100
Environment	1	1.4	50	68.5	22	30.1	73	100
Overall quality of life	0	0	51	69.9	22	30.1	73	100

Note: No. is abbreviated for a number of respondents.

As shown in Table 3, a number and percentage of respondents who were patients with drug-taking after rehabilitation at the rehabilitation center in three temples were classified by physical, psychological, social relationships, environment domains and the overall quality of life. Results indicated that of 73 respondents, 61 of all were moderate, and 12 of all were a better life in a good physical domain, which their percentages were 83.6% and 16.4% respectively. For psychological domain, 34 patients of all were in moderate, and 39 of all were in a good psychological domain, which their percentages were 46.6% and 53.4% respectively. For social relationships, 3 patients of all were in poor, 55 of all were in moderate, and 15 of all were in a good social relationships domain, which their percentages were 4.1%, 75.3%, and 20.5% respectively. For the environment, a patient of all was in poor, 50 of all were in moderate, and 22 of all were in good environment domain, which their percentages were 1.4%, 68.5%, 30.1% respectively. For overall quality of life, 51 patients of all were in moderate and 22 of all were good, which their percentages were 69.9 and 30.1 respectively.

DISCUSSION

From the assessment of the quality of life of patients with drug-taking who attended to the rehabilitation center in three temples of Ta Kai Pluang Temple, Saphan Temple, and Khao Phra Nunnery Center, scores of the quality of life between before and after rehabilitations are significantly different. Before rehabilitation, the number of overall quality of life is at 86.90 in the moderate level; this is explained that the four domains of physical, psychological, social relationship and environment of the patients with drug-taking are being with the problems. The reasons why the patients evaluated themselves before rehabilitation in the moderate level are, the patients are in the many stages of problem such as physical, mental and psychological, personality and livelihood problems. This is related to Thanyarak Hospital's study which states that the factors on drug-addicts are the effects from drug that transform both physical and psychological domains of the patients. This shows that the environment is also significantly; people in slum and people who have friends or relatives use drug are risky to take drug. Furthermore, the reason that causes people to use drug are from the genetic problem. According to Australian National Council on Drug, factors on taking drug are from (1) personal factor such as the genetic disorder, uncontrolled behavior and other conflicts, (2) other factors from family such as management in the family, poor communication and relationship among members of family. [9]

After rehabilitation, the number of overall quality of life is at 92.16. Even this result is in the moderate level, its score is higher than the before rehabilitation. Thus it is implied that after the rehabilitation, the quality of life of the patients with drug-taking are better. For physical domain, the patients consume food with best nutrition, keep fit with exercise in every morning. For psychological domain, the patients practice Dhamma which improve them to be relaxed from their personal psychological problems. For environmental

domain, the patients learn how to live in the society and how to follow the rule of the society as well as how to avoid returning drug using. For social relationship, the patients learn how to make relationship with new friends and keep that relationship to be long. These are related to Tassana Boonthong who points that all human's trust on health is concerned with the belief, norm, and behaviors. [10]

The scores of overall quality of life after rehabilitation tend to be increased. This is implied that patients with drug-taking who had ever faced with many of physical, psychological, social relationship, and environmental problems during drug addiction, can restore themselves in all domains after rehabilitating and stay in the present society. In each criteria stage, percentages of worse quality of life have been reduced; this ensures that patients with drug-taking after rehabilitation have a better well-being. Furthermore, the rehabilitation center should promote any activity in order to build up the relationship among the rehabilitated patients and family and society.

ACKNOWLEDGMENT

The author would like to express my sincere thanks to Suan Sunandha Rajabhat University, Bangkok, Thailand for financial support, patients with drug-taking for their deep information and other officers of Ta Kai Pluang Temple, Saphan Temple as well as Khao Phra Nunnery Center for generous assistance.

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POTENTIAL FOR DEVELOPMENT AS A TOURIST ATTRACTION OF THE THAISONGDUM COMMUNITY, BAN PHAISINGH, CHUMSAENG DISTRICT, NAKHON SAWAN PROVINCE

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ABSTRACT

This research aims to study the potential for tourism development of the Thaisongdum Community, Ban Phaising. By identifying participatory action research (PAR) for data collection, using AIC and PAR techniques. Explorations, in-depth interviews, group discussions, observations, sub-group conferences, the experiment followed the guidelines. The researcher collected data from the document. Descriptive analysis and content analysis based on logical analysis and comparative. By using the information of Thaisongdum from the synthesis of relevant papers and research by content analysis and presentation of comparative narrative content, the researcher brings the findings together in a coherent synthesis.

The study found that the potential for tourism development of Thaisongdum, Ban Phaising, Chum Saeng District, Nakhon Sawan Province has the potential as follows: (1) Potential for development as a cultural tourism site, (2) Community participation potential

Keywords-Potentiality; Development; Tourism location; Thaisongdum; Chumsaeng District; Nakhon Sawan province

INTRODUCTION

Cultural tourism is a study of knowledge in an area or area that has important historical and cultural features, tells the story of social and human development through history as a result of culture, knowledge, and giving. The value of society By a valuable architecture or natural environment can express the beauty and benefits of nature and reflect the state of life. The well-being of people in each era is very good Economic, Social and Cultural Conditions. [1]

Thai Thaisongdum is an ethnic group that speaks the Thaisongdum dialect, a Thai people called Thaisongdum people, which are divided into the colors of the costumes, such as the Thaisongdum, the Thaisongdum, and the Thaisongdum, Thaisongdum people dress in black. It is called "black", which means "The band ", which means" pants ", because Thaisongdum people wear black pants, men and women, Thai people and Lao Puan, so called Lao Song, which means Laos. Because of the name "Lao Song", the word "Lao" is used by Thai people to call people who migrate from other places, but the Thai people claim to be Thai people. Thai Black [2]

Ban Phaisingh, Moo 2, Phaisingh Sub-district. In the past, this area was uninhabited, with numerous bamboo forests and wildlife. There was a hunter named Singh who was a wildlife man who lived in the jungle first. Later, the Ta Pak and Yai Choi migrated from Ban Kokkhom, Petchaburi province, and built their houses. Singh (Hunter), and the black generation of the next generation of people, so the population has increased, villagers are ready to use the name of the country. And people find that is Ban Phai Ta Singh.

Later, the cast is the Phaisingh to date. The uniqueness of this community is language, dress, food, habitat patterns, traditions and rituals, are another interesting ethnic group.

Participatory tourism management is an important strategy for successful tourism operations. In addition to a wide range of attractions, strong cultural and community life is also a part of tourism management by engaging in participatory processes.

To ensure that all stakeholders are aware of Thaisongdum and environmentally-friendly, Thaisongdum tourism management and it can be developed as a tourist, learning resource or community learning center. Researchers are interested in developing a participatory tourism management model of the Thai Black River community, Ban Phaingh, Chumsaeng District, Nakhon Sawan province.

OBJECTIVE

Study the potential tourism development of the Thaisongdum, Phaisingh, Chumsaeng District, Nakhon Sawan province.

METHODOLOGY

This research uses participatory action research (PAR) procedures for stakeholders, to collect data using AIC and/or PRA techniques, surveys, in-depth interviews, group discussions, observations, sub-group meetings, and Experiment with the guidelines.

1. Data Source

Secondary sources provide information on academic papers, publications, related research, and community information to provide a theoretical concept that can be used to guide the development of educational tools and debates. Reference, primary data is collected directly from the study population and is further Thaisongdum from secondary data, participatory tour management information, and participatory research network.

2. Population

The population used in this study consists of 4 stakeholders:

- 2.1. Local experts include teachers, teachers, clergy, elder.
- 2.2. The group of people who know the black culture of the Thaisongdum Ban Phaisingh community consists of community leaders, local administrators, village headmen, leaders of various groups.
- 2.3. The governmental operators include Nakhon Sawan Tourist and Sports Office, Private Tourism Authority
- 2.4. People living in tourist attractions and nearby areas

3. Documentation Resources

By studying and synthesizing concepts, theories from books, textbooks, journals, articles, the internet, and related research. And the in-depth interview, the expert on the potential for development is a tourist attraction of Ban Phaisingh Thai community.

4. Personal Resources

In this research, there were 9 school administrators, villager representatives of Nakornsawan Tourist Office and Nakhon Sawan Rajabhat University.

Research tools

An interview on the potential for tourism development of the Thaisongdum community, Ban Phaingh, Chumsaeng District, Nakhon Sawan province, both official and unofficial, school administrators, villager representatives of Nakhon Sawan Tourist Office and teachers in Nakhon Sawan Rajabhat University. Used as a guideline for interviewing and recording data on the drafting model of participatory tourism management in the Thaisongdum community, Ban Phaingh, Chumsaeng District, Nakhon Sawan province.

5. Data collection

- 5.1. Explore the potential for community development.
- 5.2. Organize sub-group meetings, interviews, and interviews on the potential for tourism development of the Thaisongdum Community, Ban Phaingh, Chumsaeng District, Nakhon Sawan province.
- 5.3. Coordinate with those involved in collecting data by in-depth interviews to determine the participatory tourism management model of the Thaisongdum community, Ban Phaingh, Chumsaeng District, Nakhon Sawan province.

6. Data analysis and presentation

The researcher collected the data from the documents, descriptive analysis and content analysis using logical analysis and comparison using data of Thaisongdum from the synthesis of documents and related research. By content analysis and presentation of comparative narrative content, the researcher brings together synthesized and coherent findings into a draft of the participatory tourism management model of the Thaisongdum community, Ban Phaingh, Chumsaeng District, Nakhon Sawan province.

RESULTS

A meeting was organized by using the Focus Group Discussion to study the potential for tourism development of the Thaisongdum community, Ban Phaingh, Chumsaeng District, Nakhon Sawan province. Phai Sing, President of the Northern Thaisongdum Club, Deputy Chairman of the Provincial Administrative Organization of Phaingh, Teacher of Wat Klong Kasem North School and people representatives in the community of Phaingh. It was found that the community of black people, Ban Phaingh has the potential to develop as a tourist.

1. The potential in presenting traditional culture

Management of traditional tourism traditions is ongoing, welcoming visitors to the village's cultural traditions, arranging for the potential that is available to those who visit them. There must be a contact person to let you know that there are visitors to the village culture. The leader of the group told the group of Thai people to prepare food, dress, wicker, weaving, and woven cloth, such as the unique style of the black Thai in the village welcome visitors. And when visitors come to visit the show will be held. It does not demand visit rates and performances that are viewed by visitors. Including a welcome meal is based on the satisfaction that the visitor is sympathetic and hands on. Every time a visitor comes to see the black culture in the village.

1.1 History

History, traditions, customs and traditions of Thai people to provide an introduction to Thai Black Dances, Ban Phaingh for tourists.

1.2 Souvenirs

Souvenirs will be a souvenir for visitors, only to see that there are many items that are used for folk games. But it will not be sold as a souvenir. However, the community has offered the idea of making souvenirs, which is the basketry for various ceremonies by the community, prepare the materials.

1.3 The rituals about the black Thai calligraphy.

The black ritual used as a selling point in welcoming visitors is a gift, using a wrist strap and there will be an old man dressed in black Thai costumes that are unique to the ritual and there will be invitations to the ritual perception and happiness, warmth visitor comfort and visitor feedback are very satisfying and happy to have come into the black pig house in Thailand.

1.4 Food, catering for tourists by the black people to make food for tourists, which is a traditional food of the black with delicious to impress tourists.

1.5 On the show, to reflect the traditional Thai culture black. The show features young people who are proud of being black Thai, such as performing, dancing.

1.6. The folk games, which can reflect the traditional Thai culture black and proud of being black as well by providing children's games and inviting tourists to play with the youth of the black, such as playing a monkey, playing the ant, ghost, playing basketball, playing patella.

1.7 Language, Thai people are still using the Thai language to contact Thaisongdum together, Thai language writing, writing, reading for tourists to study.

2. *Potential for Community Participation*

The participation of people in the Thaisongdum community is blown away, Ban Phaisingh. The development of the systematic tourism is due to the old people in the community who are still in love, religious cultural affiliations, beliefs, Traditions and rituals are inherited. The important thing is to develop tourism potential as well. The knowledge management and awareness will be needed for the younger generation to inherit their culture to develop into a systematic tourism. By defining features:

2.1 Thaisongdum youths are proud of being black and aware of the tradition of Thai heritage. As well as conveying to the visitors are aware.

2.2 Thaisongdum youths get knowledge about culture, Thai traditions are blacker.

2.3 Thaisongdum youths are trained. The presentation of knowledge about Thailand has been known to tourists.

2.4 Thaisongdum youths have learned the role they play in the inheritance, culture, and transmission to tourists.

CONCLUSIONS

Thaisongdum culture, the context of the Thaisongdum community, Ban Phaising is used in tourism. It is a concrete or abstract culture. Cultural attractions, antiquities, historical sites, fine arts, performances, folk games, festivals, arts and crafts and local products, as well as the way of life and well-being of the people in the community. By Thaisongdum community, Ban Phaising Singers still believe in their own potential, but it is imperative to review each potential in real life because of the changing lifestyle of people in the community. Most of the people in the community do not wear black suits. They can be bought and woven. Or can create a career in the community when it is sold at the store or when ordering. For the Thaisongdum language spoken in the same way, people who are not in middle age do not use dialect or Thaisongdum language. Because they are outdated and their children are sent to school, they are taught to speak Thai. The living space has changed. From a traditional house to a modern building or home, half a half-timbered house expresses the modernity of the host. The lack of identity of the traditional residence and traditions are differentiated from the ancient traditions.

DISCUSSION

The Thaisongdum community of Ban Phaising has the potential to develop as a tourist attraction. The main activities are as follows: (1) Set up the Thaisongdum Ban Phaising community learning center. The management of the center, the establishment of the center committee, the use of the Thaisongdum club directors, the provision of local knowledge workers. Thaisongdum and the caretaker can earn income and support from the Northern Black Thaisongdum. Clothing is sold by Thaisongdum and career promotion, (2) Traditional Heedong Thaisongdum, Annual Festival of Thaisongdum. By scheduling a monthly calendar or calendar, which will be held in the 4th, 6th, 8th, 12th and the new rice traditions, (3) Organize media relations and coordinate with TAT. Newspapers, public relations websites through social networks, press releases TAT, Nakhon Sawan Province, brochures public relations. And public relations through other government agencies, (4) develop and offer Thaisongdum language courses in schools. By crafting Thaisongdum language courses, arts, handicrafts, traditions, music (can), open speech, writing, Thaisongdum, learn black costumes and have a native show.

[3] As the study of A Community Potentials for the Development of the Cultural Tourist Attractions in Mae Chaem District Area, Chiangmai Province found the appearance or look of Mae Chaem effectively reflects its belief system, wisdom, traditions, rites and rituals, as well as typical ways of life which are practiced until now. In addition, the power or influence in the community is also found in terms of the de facto respect to seniors, the idea of the new generation on cultural tourism development in their homeland, and the cooperation from the public sector, aiming to promote tourism

In the same direction as the study of [4] the community participation in arts and culture Learning Resource Development: Case studies of communities along Chanthabun Riverside. Be divided into 4 phases as follows: (2) take part in self-identification and the approach to community development in order to find out Organize the community and organize the community, organize the community, organize the community, and coordinate the community, the interpersonal relationship, (3) communicate to establish understanding and participation in physical development in order to allow the community to seek for approaches for building conservation and physical development. In some communities, (4) support participation in community commercial activities in community and community.

Same as [5] the study location of Baan Thung-Maprang, Kuan Doan District, and Baan Ton-Panan - Maprang and Baan Ton-Panan is a natural place where overall tourism potentiality is on average. (1) For tourism location, the strong point of the area, (2) For tourism readiness, we should prepare facilities to develop tourism, to create tourism and to promote tourism, to focus on tourism activities which can learn and get excited about meeting with target groups like teenagers and working people, as well as making brochures and websites for tourism. It is evident that the Thaisongdum community culture is a good role for linking tourism between both communities. The context of the Thaisongdum community, Ban Phaising community that is used in tourism is a concrete or abstract culture. That can be developed as a focus for tourists. Cultural tours, antiquities, archaeological sites, art history, performances, folk games, festivals, arts, handicrafts and local goods. As well as the way of life, living, and courteousness of people in the community, etc. The study of the management of the Sukhothai Historical Park meets the needs of tourists and the community [6] where a marketing strategy that attracts customers to visit. There are several levels to choose from, or prices are clearly stated. Secondly, service providers have good language skills or amiable and to arrange a suitable place or beautiful/clean order or community Thaisongdum community, Ban Phaising may need to expand the base and support foreign tourists. [7] study on Promoting Tourism for Chinese Tourist in Bangkok found that most of the respondents are between 15 to 25 years old, married and mostly coming from the Republic of China. The sector has the salary more than 3,001-5,000 Yuan. In the aspect of travel behavior, the study

shows that the tourists visit Bangkok for the purpose of leisure and Thaisongdum and cultural experiences respectively. To arrange their travels, most of them visit Bangkok for their first time with friends and prefer to stay in a hotel regarding the expectation. Chinese tourists have their great expectation toward religious sites, temples, and Chinese spirit houses.

Even though the Thaisongdum community, Ban Phaising still believe in their own potential. However, there is a need to revise the potential of each aspect in real life, because, in today's changing lifestyle, people in the community are changing. Most of the people in the community do not wear black suits. They can be bought and woven. Or can create a career in the community when it is sold at the store or when ordering. For the Thaisongdum language spoken in the same way, people who are not in middle age will not use dialect or Thaisongdum language because they are obsolete and have to send their children to school. The living space has changed from a traditional house to a modern building or home, half a block of wood expresses the modernity of the host. The lack of identity of the traditional residence and traditions are differentiated from the ancient traditions.

SUGGESTION

The researcher found that the development of the participatory tourism management model of the Thaisongdum community, Ban Phaising, Chumsaeng District, Nakhon Sawan Province was still problematic.

1. Due to the research on the development of the participatory tourism management model of the Thaisongdum community, Ban Phaising

The result of the study found that in the black Thai community, Ban Phaising still needs the budget to support tourism more effectively. So there should be various agencies. To support the tourism budget in the Black Thaisongdum community, Ban Phaising more than ever, or else the village should find more options. To agencies, the village will seek help from government agencies or private agencies to take part in the development of eco-tourism within the village.

2. All members of the village should cooperate to maintain the Thaisongdum identity and cultural values to live with the Thaisongdum community, Ban Phaising forever should not accept the culture from the outside very much, This part of the research.

The researcher is concerned about the tourism and lifestyle of the people in the village that may change from the environment that penetrates the village.

3. The voluntary community will be the driving force for tourism management but no knowledge of tourism development. So there should be a community-based advocacy agency in order to benefit the development of the Thaisongdum tourism in the community.

ACKNOWLEDGMENTS

I thank you the Office of the Higher Education Commission supports this research budget. Thanks to the research team from Nakhon Sawan Rajabhat University for their cooperation and research assistance. Finally, thank you to Suan Sunandha Rajabhat University for providing advice and support to disseminate this research.

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POLICE AND PUBLIC PARTICIPATION MECHANISM FOR TRAFFIC PROBLEM-SOLVING DEPARTMENT STORE, SCHOOL AND MARKET AREA IN METROPOLITAN POLICE BUREAU THAILAND

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ABSTRACT

The research topic of Police and Public Participation Mechanism for Traffic Problem-Solving Department Store, School and Market Area in Metropolitan Police Bureau. There is an objective to Problems traffic and Public Participation Mechanism Models. In the study are used Quantitative and Qualitative Research Methods. The target groups are Representative from Store, School and Market Area which have been directly affected and the traffic police officers in Metropolitan Police Bureau. The results showed that:

1. Public Participation Mechanism for Traffic Problem-Solving Department Store, School and Market Area in Metropolitan Police Bureau

Problem-Solving Department Store, School and Market Area in Metropolitan Police Bureau need to get cooperation of all departments to strengthen which various problems can be solved manually. Public Participation Mechanism can be summarized into 4 main are Information, Consultation, Meeting and Decision Making

2. Public Participation Mechanism Model for Traffic Problem-Solving Department Store, School and Market Area in Metropolitan Police Bureau

1) Public Participation Mechanism Model of Department Store -- Customer - Officials or Security guard - Executive department stores - Public transport - Police officer

2) Public Participation Mechanism Model of School -- Student - Parent - Teacher or Staff - School administrators - Police officer

3) Public Participation Mechanism Model of Market -- Customer - Executive or Enterprises - Public transport - Municipal official - Police officer

Keywords: Public Participation Mechanism, Traffic Problem-Solving

INTRODUCTION

Traffic in Bangkok is a major problem for the Metropolitan Police Bureau to continue to develop and resolve traffic problems. However, due to the current situation, Bangkok is a rapidly growing metropolis. It is noted that the construction of the building. Whether it is a commercial center. And a housing estate including the condominium steadily rising. Major impact are "Traffic Problems" (Metropolitan Police Bureau, 2014)

The Development and Revision of the Traffic System at Bangkok in 2014. Summary of strategic public relations and establish the involvement of citizens in public works, traffic information, traffic quickly and seek cooperation from the public. (Department of Land Transport, 2014) The goal of the strategy is to get the traffic

information that is accurate and fast and the traffic police have been cooperated with the public to solve traffic problems. Measures are public relations traffic through various media. It also allows people to take part in the problem solving process are

- 1) Public Relation of traffic online news.
- 2) Public Relation of traffic all types mass media.
- 3) PR Journal of the Metropolitan Traffic.
- 4) Publication by Billboard
- 5) Education the public who use the road
- 6) Education all types of public riders.
- 7) Training volunteer traffic
- 8) The Guardian Road
- 9) Creating public participation in traffic

Traffic problems in Bangkok not just the amount of cars may include the violation of the law. (NIDA Poll, 2014). The traffic that should be moving into a standstill, such as the importance of law enforcement with route users such as taxis, buses, vans or other public service vehicles and bus stop in front of the mall. (Metropolitan Police Bureau, 2014)

Public Participation is activities such as political, economic, and social events occur in various forms according to purpose, the meaning of participation varies. (Warangkana Wattayo, 1997). The stages of participation are 3 steps, namely the basic step purpose of management is to engage in educating the public only, Intermediate step people will be more involved in providing information and counseling. But no decision-making power and the final step is participation where the people have the power to make decisions and carry out the details accordingly. (Arnstein S.R., 1995) In addition, participatory development can mean the right of people to make policy decisions regarding allocation and utilization, which is a necessity for people to participate in planning. (Hongwiwat T., 1984)

From the above problems, Researchers are interested in studying the mechanism of participation between police and people in solving traffic problems on the department stores, schools and markets in the Metropolitan Police Bureau, Thailand

OBJECTIVE

- 1) To study traffic problems in department stores, schools and market in Metropolitan Police Bureau area.
- 2) To study the mechanism of participation between police and people in solving traffic problems department stores, schools and market in Metropolitan Police Bureau area.
- 3) To create a mechanism for participation among police and people in solving traffic problems department stores, schools and market in Metropolitan Police Bureau area.

METHODOLOGY

This research is based on Quantitative and Qualitative Research Methods. Quantitative data were collected the questionnaire by the road users in department stores, schools and market in Metropolitan Police Bureau area are each 200 sets of 600 sets total. Qualitative data were collected through in-depth interviews, focus group discussions, was conducted and the researchers then took the findings. Relevant is the concept of SWOT analysis, system analysis to conduct research by Focus Group Discussion. The Sampling for Qualitative data were collected from representatives from various agencies have 10 items, namely

- 1) Representatives from City Law Enforcement Department Thailand
- 2) Representatives from Strategy and Evaluation Department, Thailand
- 3) Representatives from Bangkok Mass Transit Authority (BMTA).
- 4) Representatives from the Federation of Thai Industries
- 5) Representatives from Trade Associations
- 6) Representatives from Department Store Executives
- 7) Representative from School Director.
- 8) Representative from Owner or Manager of the Market
- 9) People affected by traffic in Metropolitan Police Bureau
- 10) Traffic volunteers

RESULTS

1. Mechanism of Participation between Police and People in Resolving Traffic Problems in Department Stores, Schools and Markets in Metropolitan Police Bureau Thailand

Asking for opinions from people in the study and Focus Group with representatives of relevant agencies. This is a concept that can be supported by the creation of public participation mechanisms involved in the development of joint thinking, decision-making, problem solving, policy suggestions and the needs of people with stakeholder who have affected the life.

Problem solving needs to be coordinated by mobilizing every element at every level. To strengthen the self-resolution of the problem by a participatory mechanism can be summarized into four main mechanism were

1) Information Citizens and relevant agencies must be informed of the existence of the project, including the details of the project to be addressed or the internal traffic system and outside the area. Including the expected impact if in times of heavy traffic or dense during the day and time

2) Consultation Leading involvement with the management discussion between people with different agencies about the project activities that require action to resolve traffic problems to hear feedback, more suggestions, useful information to understand the project or activities at various units of each area.

3) Meeting The purpose is between people with different agencies about the project activities or activities to traffic problem solving. Including the decision makers in the project or activities that use the convention to understand and look forward trouble or reason for project implementation.

4) Decision Making The ultimate goal of public participation is that the public will decide role depending on the constituent elements involved. Including police officers who operate the traffic police stations in area to solve traffic problems of different areas by participating in decision making, suggesting or participating in management or improve the efficiency of the management system and the work traffic problem solving to achieve the goals and continuous monitoring and evaluation and concretization

2. Mechanism for traffic problem-solving department store, school and market area in metropolitan police bureau Thailand

The researcher has integrated into creating a mechanism for participation between the police and the people and the summary is as follows:

1) Mechanism for traffic problem-solving department store in metropolitan police bureau Thailand

1.1) CONSUMER

- Follow the rules and regulations of department stores.
- Cooperate with department stores to solve traffic problems.
- Create a sense of service in the department store.
- Provide feedback or suggestions to resolve traffic problems.
- Should choose public transport going to department stores for reduce traffic problems.

1.2) SECURITY GUARD

Management within the department store

- The parking system is adequate.
- The parking lot alert system.
- Co-ordinate internal co-workers and police officers to solve problems.
- Security of users.

Management outside the department store

- Proper and fast card picking.
- Train traffic volunteers with local police.
- Coordination of local police stations when activities are organized and emergency.

1.3) DEPARTMENT STORE EXECUTIVE

- Management meeting of department store staff and police to analyze and fix traffic problems continuously every month.

- Plan and implement a traffic management plan and problem solving of the department store and continuous monitoring of performance.

- Improve and develop the traffic system with the relevant department of the department store to facilitate the user and security.

- Strict rules and regulations for traffic management.
- Project publicity or the activities of department stores.

1.4) PUBLIC TRANSPORT

- Pick up and drop off passengers in the parking lot of the department store.

- Raise awareness for passengers by observing the rules and the rules of the department store and the traffic laws of the police strictly.

- Do not parking public transport for get on and off Passenger in the traffic lane.
- Get on and off passengers to the bus stop and not waiting for passengers.

1.5) POLICE

- Strictly supervise and enforce the law strictly for road users.

- Collaborate in coordination with department stores in the event of events or emergency service user safety.

- Focus on managing traffic seriously and continuously.

- Police with the department store staff can coordinate with the department store as well as monitor performance.

2) Mechanism for traffic problem-solving schools in metropolitan police bureau Thailand

2.1) STUDENT

- Follow school rules and regulations.
- Traffic discipline.
- Prepare yourself before get on and off the car to avoid causing traffic jam.
- Join a school project that coordinates traffic management.
- Should choose a school bus or public transport going to school for reduce traffic problems.

2.2) PARENT

- Cooperate with the school to follow the rules and the school's regulation on internal traffic management and outside the school and police.

- Create discipline for traffic students.

- Attend traffic resolution sessions.
- Prepare your student before get on and off the car to avoid causing traffic jam.
- Join a traffic volunteer to manage the traffic of the school.
- Parking in the parking lot provided by the school.

2.3) TEACHER / STAFF

- Teachers / Staff to handle traffic in rush hour.
- Security to receive and send students.
- Location arrangement for get on and off the car to avoid causing traffic jam.
- Participation in traffic training with local police.
- Follow the plan and traffic management systems.

2.4) SCHOOL DIRECTOR

- Invite parents to solve traffic problems.
- Plan and develop a traffic system for teachers / staff. Include parent and students to solve traffic problems.
- Improve and develop the physical characteristics of the school to make it more convenient.
- Conduct teacher / staff meetings. Including coordinating local police officers to attend the conference for analysis and solve traffic problems continuously.
- Inform the school's activities to the police.

2.5) POLICE

- Police strictly supervise and enforce the law strictly for road users.
- Collaborate in coordination with the school at the time of the event or student safety emergency.
- Attention to traffic management seriously and continuously.
- Police with school officials can coordinate with the school as well as monitor performance.

3) Mechanism for traffic problem- solving market in metropolitan police bureau Thailand

3.1) CONSUMER

- Follow the rules and regulations of the law.
- Traffic discipline.
- Parking in the parking lot of the market.
- Do not park the car across the traffic inside and outside the market.
- Choose public transportation instead of private car.

3.2) OWNER OR MANAGER

- Provide enough parking spaces for the number of users. If parking is not enough, additional supply and shuttle service bus.
- The parking area in the freight market. And to determine the duration of the transit.
- Organize traffic by having route signs or other necessary traffic signs.
- Train staff to train volunteers to assist police.

3.3) PUBLIC TRANSPORT

- Shuttle service bus for passengers in market area.
- Raise awareness for passengers by following the rules and the rules of the market and police
- Do not parking public transport for get on and off Passenger in the traffic lane.
- Get on and off passengers to the bus stop and not waiting for passengers.

3.4) MUNICIPAL

- Supervision of sales people not to set up shop beyond the corridor and surface traffic
- Coordinate the traffic problems in the fresh market with local police continuously.

3.5) POLICE

- Strictly supervise and enforce the law strictly for road users.
- Collaborate in coordination with market in the event of events or emergency service user safety.
- Focus on managing traffic seriously and continuously.
- Police with the market staff can coordinate with the market as well as monitor performance.

DISCUSSION

Authorities should enact legislation to regulate entrepreneurship. Show social responsibility in favor of the amendment supporting the traffic authorities (Corporate Social Responsibility or CSR) the level of responsibility are follows.

Level 1 Mandatory Level: Legal requirements refer that a business is obliged to comply with relevant laws and regulations, such as traffic laws, consumer protection laws, employment laws, paying taxes.

Level 2 Elementary Level: Economic benefit refers to the business's ability to survive and provide feedback to shareholders. The profit must not be the profit that results from social encroachment.

Level 3 Preemptive Level: Business ethics refer to the ability of a business to make a profit for its shareholders at an appropriate rate, and the entrepreneur cares for greater social returns. Especially the surrounding society, with the expectation that it will be viewed. Or care from business operators.

Level 4 Voluntary Level: Volunteering refers business in line with the CSR principles of volunteering not being demanded by society. The business is based on the benefits of society is important.

SUGGESTION

Next Research should study the mechanism of participation between police and the public in solving traffic problems in other areas because of differences in area make it and other ways it is used to improve the problem of public participation and traffic. Because the implementation guidelines should be changed regularly. And re-developed all the time. Government officials Include relevant agencies in each area will need to improve performance Equal and progressive than Analysis. Solution and to seriously experiment. If there are defects Together, find solutions to more concrete solutions.

ACKNOWLEDGMENTS

Authors are thankful to the referees for their useful suggestions. The first author is also thank you to my colleagues in Suan Sunandha Rajabhat University for grant, Dr.Plawut Wongwiwat for their help and support.

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THE ADAPTTION OF THAI INDUSTRY TO ENTER ASEAN ECONOMIC COMMUNITY

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ABSTRACT

The purposes of this research were to investigate the effects of ASEAN Economic Community to the Thai industry in terms of opportunities and threats as well as to offer the guidelines for Thai industry to adapt itself to the new environment of ASEAN single market. This was a qualitative research method using mainly the context analysis from secondary information. The findings revealed that there are several important ways to offer as guidelines for adaptation of Thai industry. There should be an improvement the effectiveness of production in terms of labors force, technology and the production level to match with the demand of world market and there should be a production network to produce in the large volume in order to gain economy of scale to reduce cost.

Keywords: Adaptation, Thai Industry, AEC, ASEAN

INTRODUCTION

ASEAN was found in 1967 with the first group of member nations which were Brunei, Indonesia, Malaysia, Philippines, Singapore, and Thailand. After that there were four more new members which were Cambodia, Laos, Myanmar, and Vietnam [1]. The objectives were to create harmony and peace in the region which leads to the advancement of economics, social, and culture. The 8th ASEAN summit in 2002 provided a consensus to create ASEAN Economic Community (AEC) which leads to ASEAN blueprint which has four important components: a single market, enhancement of the level of competition, equity economic development, and integration to the world economy [2].

The major benefits of AEC or single market of ASEAN nations include the economy of scale and the large single market. The geographic location of Thailand allow Thailand to be at the center of ASEAN community [3]. This is one of the great advantages for Thailand. The Thai industry must find the way to adjust and adapt itself to the real the advantages of the single market and economy of scale for producing and exporting by using local resources, add values, and increase the level of competitiveness in order to enter the ASEAN Economic Community effectively.

There are many obvious benefits for Thailand to join the AEC in terms of economics, social, investment, and tourism. First, the AEC has become the major exporting market for Thailand and ASEAN market also had become the second importing market, second to Japan. In addition, Thailand had a trade surplus with ASEAN market up until present. Second, the foreign direct investment from ASEAN nation accounts for 20 percent of the Total investment. Moreover, the ASEAN community helps to reduce many obstacle and unnecessary regulations and allow ASEAN to have more bargaining power in negotiation with China. Finally, the ASEAN tourism has increased both in number of tourist and spending of the tourists. The VISA exemption of ASEAN members will further help to increase the ASEAN tourism and directly benefits Thai tourism in the long run.

EFFECTS OF AEC TO THAI INDUSTRY

Since the major pillar of ASEAN Economic Community is to have both single market and production base, this means the freely movement of five categories: goods, funds, investments, services, and skill labors. This free movement of five categories has both advantages and disadvantages for ASEAN member nations. However, Thailand as one the important member of ASEAN has many positive advantages from this policy especially Thai industry in eight areas. First, it helps to expand the international trade and international investment. Second, it helps to create a good image of Thailand in the world stage and increases the level of

confidence of Thai exporters. Third, it helps to facilitate the convenience in terms of exporting and importing both in domestic and international market as well as increase the real GDP of Thailand [4]. Fourth, it helps to increase the potential of Thai entrepreneurs and Thai investors and use resources effectively and efficiently. In addition, it also helps to reduce the transaction costs of international business. Fifth, it helps to increase the opportunity for both purchasers and consumers to have more choices to choose and better access to low cost and high quality products and services due to the healthy competition. Sixth, it helps to increase a domestic employment from the expansion of trade and business international. Seventh, it helps the high skill labor from Thailand to have an opportunity to work abroad with high paid in many areas of MRA agreement with ASEAN nations such as physicians, architectures, engineers, and accountants. Eighth, it helps to increase knowledge and skill development by exchanging technology and experience among ASEAN nations [5] [6].

However, the ASEAN market also provides some threats to Thai industry. First, the other ASEAN members can export their products and services into Thailand with low taxes or no taxes at all. Therefore, the domestic producers and entrepreneurs has to compete with all ASEAN nations. Second, domestic market has no protection mechanism which allow low quality with cheap price products to enter Thailand [7]. Third, Thailand needs to improve infrastructure and labor productivity in order to be able to compete with all ASEAN nations. Fourth, the free movement of labors will allow high skill labor from Thailand to work in other ASEAN nations and create the shortages of high skill of labors in Thailand. At the same time, there are many illegal workers enter Thailand and remain in the country for a long time.

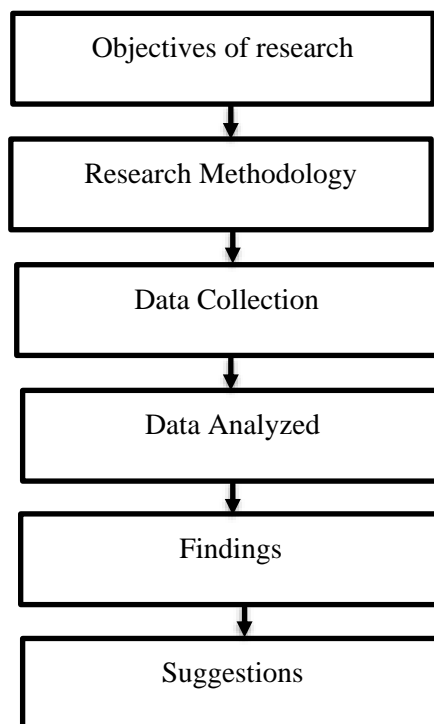


Fig. 1 Research Process

METHODOLOGY

The two main purposes of this study were to investigate the major effects of ASEAN Economic Community to the Thai industry in terms of opportunities and threats as well as to provide important guidelines for Thai industry to adapt itself to the new environment of ASEAN single market and production base. This was a qualitative research method using mainly the context analysis from secondary information. The process of this research involved six steps: research objectives, research methodology, data collection, data analyzed, findings, and suggestions [8] [9].

GUIDELINES FOR SUCCESSFUL ADAPTATION OF THAI INDUSTRY

From the study of opportunity and threats both positive and negative effects of the ASEAN economic community to Thailand and Thai industry. From the analysis, the findings revealed that there are seven important ways to offer as guidelines for adaptation of Thai industry. First, there should be an improvement the effectiveness of production in terms of labors force, technology and the production level to match with the demand of world market. Second, there should be a production network to produce in the large volume in order to gain economy of scale to reduce cost. Third, there should be a new exporting market to gain new exporting market and ways to find the low cost and high quality raw material. Fourth, there should be an amendment of rules and regulations to reduce the obstacle of exporting and importing. Fifth, there should be a readiness of abundance of high quality infrastructure to serve and draw the large volume of the foreign investment for production process of the nation in order to export effectively. Sixth, there should be an overhaul of Thai tax system to benefit Thai investment and draw more foreign investors to invest in Thailand rather than other ASEAN member nations. Seventh. There should be a mechanism to propel the equity of trade and business of both domestic and international market.

In addition, there are both offensive strategy and defensive strategy that Thai industry need to understand and be able to perform to compete with other ASEAN member nations. The offensive strategy involves the search for new untapped resources in ASEAN member nations to gain low cost and high quality of raw materials. It is important to understand the taste and consumer preferences of each of ASEAN member nation and move the production process to the geographic location of advantages such as near seaport to reduce transportation costs. Finally, it is important to understand local norms, tradition, and culture of each local market of ASEAN member nations in order to increase customer satisfaction. The defensive strategy involves the understanding the strategy of competition from ASEAN member nations thoroughly and it is important to constantly find the ways to reduce cost of production without reduce the quality of products and services. It is also important to maintain customer loyalty by increasing or maintaining the high level of customer satisfaction. Finally, learn to use SWOT analysis to understand the opportunity, threats, strengths and weakness of all ASEAN member nations.

CONCLUSION

The ASEAN economic community was considered as the success step of ASEAN member nations. Obviously, Thailand has benefited from the entering AEC. However, there is a fact that there are both advantages and disadvantages from the AEC. Therefore, Thai industry would benefit more if they are well prepared for the entering of AEC. This paper offers the seven guidelines as well as both offensive and defensive strategy to enhance the successful of Thai industry from the entering the single market and large production base of AEC.

ACKNOWLEDGEMENT

The author of this research study would like to thank Graduate School of Suan Sunandha Rajabhat Univeristy for commenting, assisting, and supporting this research study. The author also would like to thank SSRU Institution of Research and Development for financial supporting of this research. In addition, the author would like to thank Assistant Professor Dr. Kevin Wongleedee, Director of Institute of Lifelong Learning and Creativity for proof-reading this manuscripts.

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